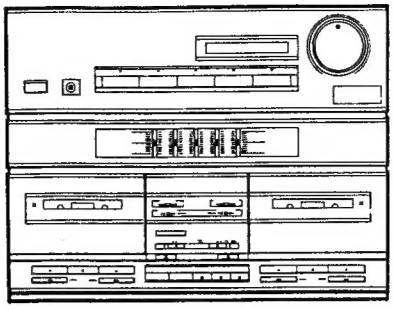
Service Manual

PIONEER®
The future of sound and vision.



ORDER NO.
ARP1689

STEREO DOUBLE CASSETTE TAPE DECK AMPLIFIER

DC-Z72

MODEL DC-Z72 HAS FIVE VERSIONS:

Type	Power requirement	Export destination
HB	AC220V,240V(swithcable)*	United Kingdom
HE	AC220V,240V(swithcable)*	European continent
HEZ	AC220V,240V(swithcable)*	West Germany
SD	AC110V,120V-127V,220V,240V(swithcable)	Kingdom of SaudiArabia and general market
YP	AC240V only	Australia

*Change the jumper wires of assembly boards.

- This manual is applicable to the DC-Z72/HB and HE types.
- For HE type,refer to pages 71-72.
- For the other types,refer to additional service manuals.
- Ce manual pour le service comprend les explications en français de réglage.
- Este manual de servicio trata del método ajuste escrito en español.

CONTENTS

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS SERVICE INC. P.O. Box 1760, Long Beach, California 90801 U.S.A.
PIONEER ELECTRONICS OF CANADA, INC. 505 Cochrane Drive, Markham, Ontario L3R 8E3 Canada
PIONEER ELECTRONIC [EUROPE] N.V. Keetberglaan 1, 2740 Beveren, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911

YV JAN.1989 Printed in Japan.

1. SPECIFICATIONS

Cassette tape deck amplifier: DC-Z72
AMPLIFIER SECTION
Continuous Average Power Output is 27 Watts* per channel, min., at 8 ohms from 40 Hertz to 20,000 Hertz, with no more than 0.3% total harmonic distortion.

**Measured pursuant to the Federal Trade Commission's Trade Regulation rules on Power Output Claims for Amplifiers.*

Music power ..... 50 W + 50 W (1 kHz, T.H.D. 1 %, 8 ohms)
DIN music power..... 50 W + 50 W (1 kHz, T.H.D. 1%, 8 ohms)
Peak music power..... 290 W
Continuous power output (DIN)..... 33 W + 33 W
(1 kHz, T.H.D. 1 %, 8 ohms)
Graphic equalizer frequency band..... 100 Hz, 330 Hz,
1 kHz, 3.3 kHz, 10 kHz, ±7 dB
Hum and Noise (DIN, continuous Power/50 mW)
PHONO ..... 68 dB/60 dB
Total Harmonic Distortion
(40 Hz to 20,000 Hz, 15 W, 8 ohms)** ..... No more than 0.2%

Tape Deck Section
Systems..... 4 track, 2-channel stereo
Heads..... Recording/playback head x 1
Playback head x 1
Erasing head x 1
Motor..... DC servo 2 speed motor x 2
Wow and Flutter..... No more than 0.09% (WRMS)
Fast Winding Time ..... Approximately 95 seconds
(C-60 tape)
Frequency Response (– 20 dB recording):
Normal tape ..... 35 Hz to 14,000 Hz ±6 dB
CrO_2 tape ..... 35 Hz to 15,000 Hz ±6 dB
Signal-to-noise ratio
Dolby NR OFF..... 56 dB
Noise Reduction Effect
Dolby B type NR ON ..... More than 10 dB (at 5 kHz)

Furnished Parts
Operating Instructions 1
Remote control unit 1
Dry cell batteries 2

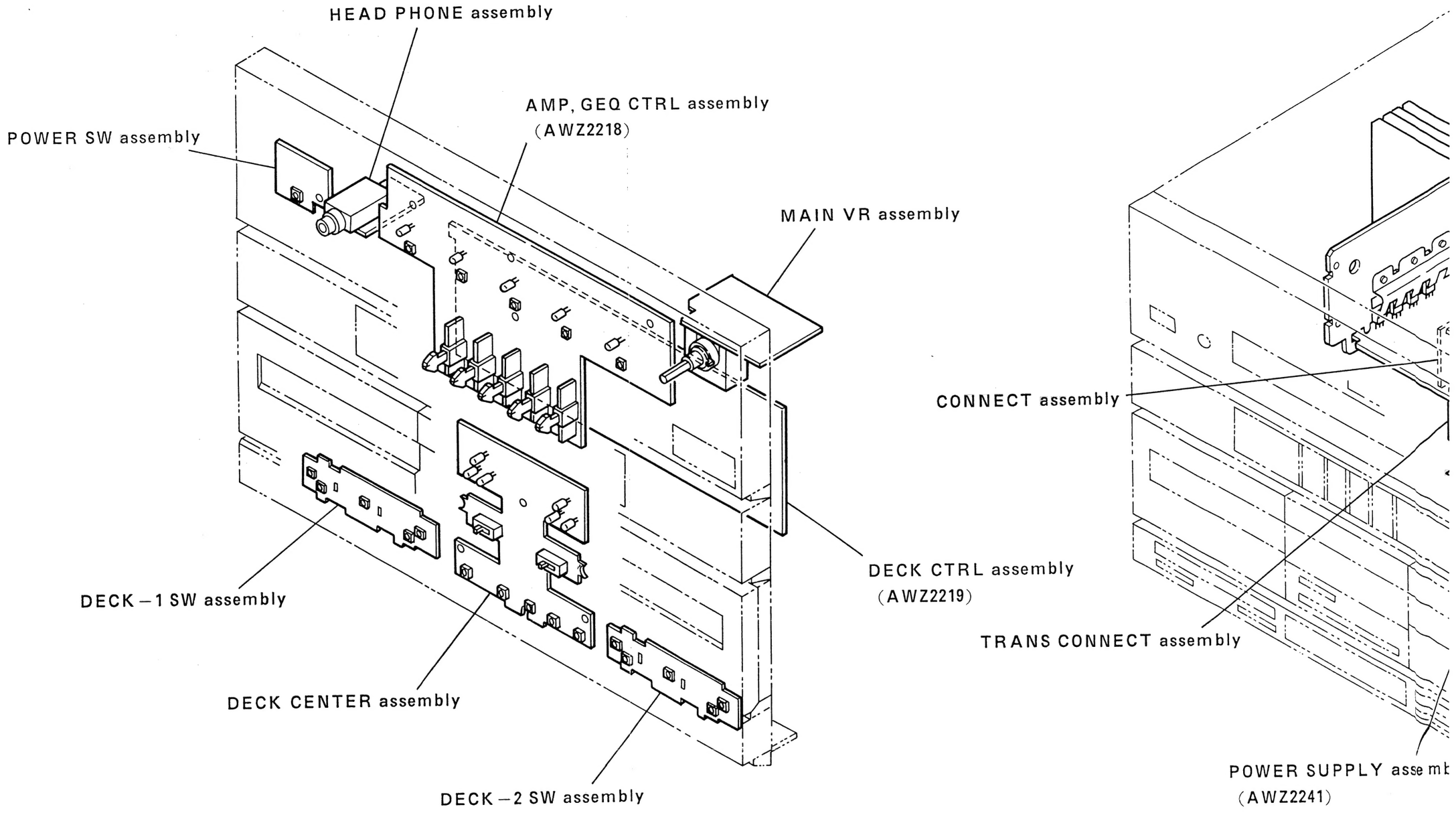
Miscellaneous
Power requirements
U.K. model..... a.c. 240 Volts –, 50/60 Hz
Other destination models
..... AC 110/120 - 127/220/240 V (switchable) 50/60 Hz
Power Consumption ..... 185 W
Dimensions ..... 360 (W) x 271 (H) x 334 (D) mm
14-3/16 (W) x 13-1/8 (H) x 10-11/16 (D) in
Weight (without package)..... 7.9 kg (17 lb 7 oz)

Accessories
EP Adaptor..... 1

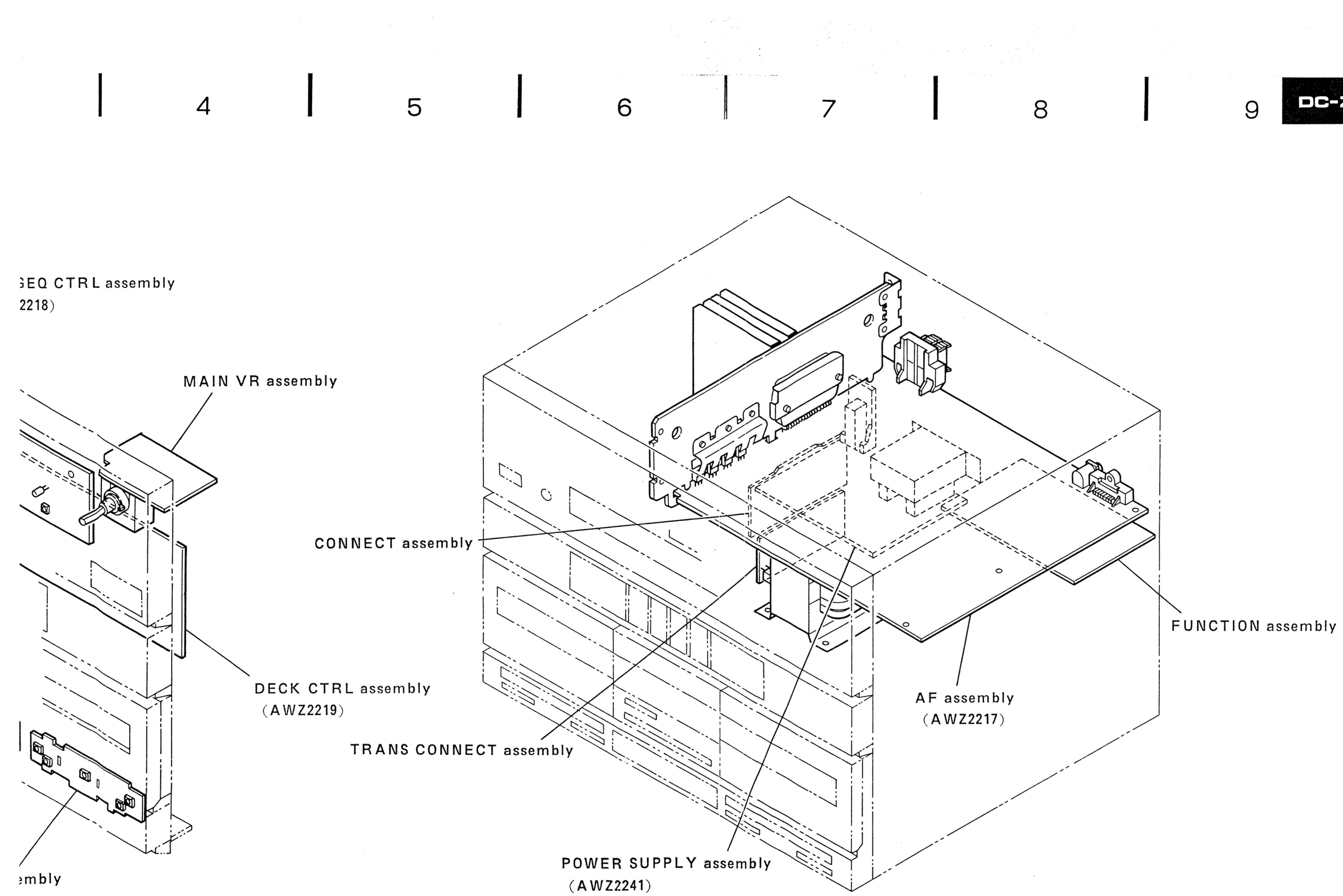
• *Specifications and design subject to possible modification without notice due to improvement.*

** *Measured By Audio Spectrum Analyser.*

2. P.C.BOARDS LOCATION



GEQ CTRL assembly
2218)



3. EXPLODED VIEWS,PAKING AND PARTS LIST

3.1 PARTS LIST OF MAIN BODY SECTIOn, FRONT PANEL SECTION AND PACKING

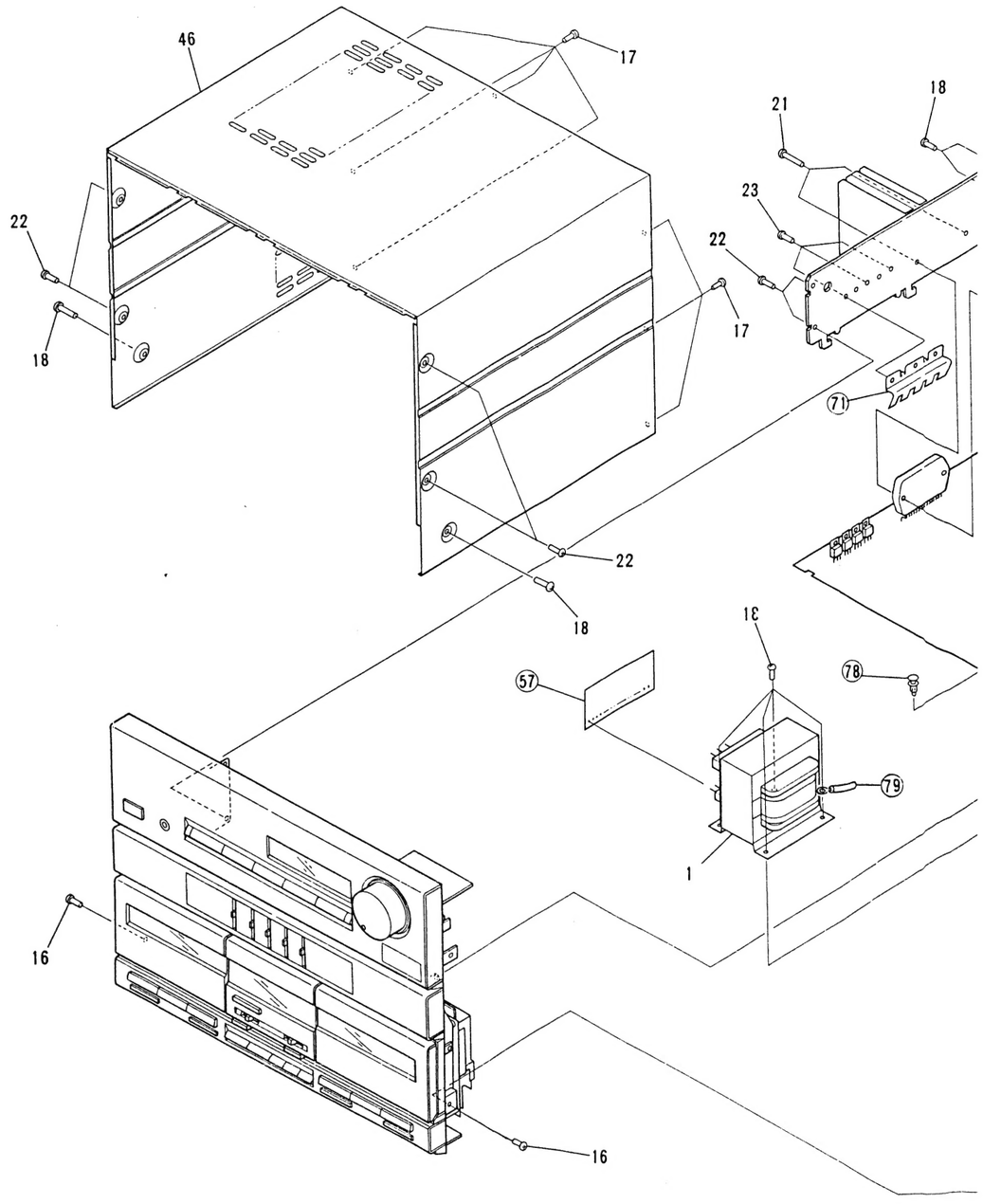
NOTES:

- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

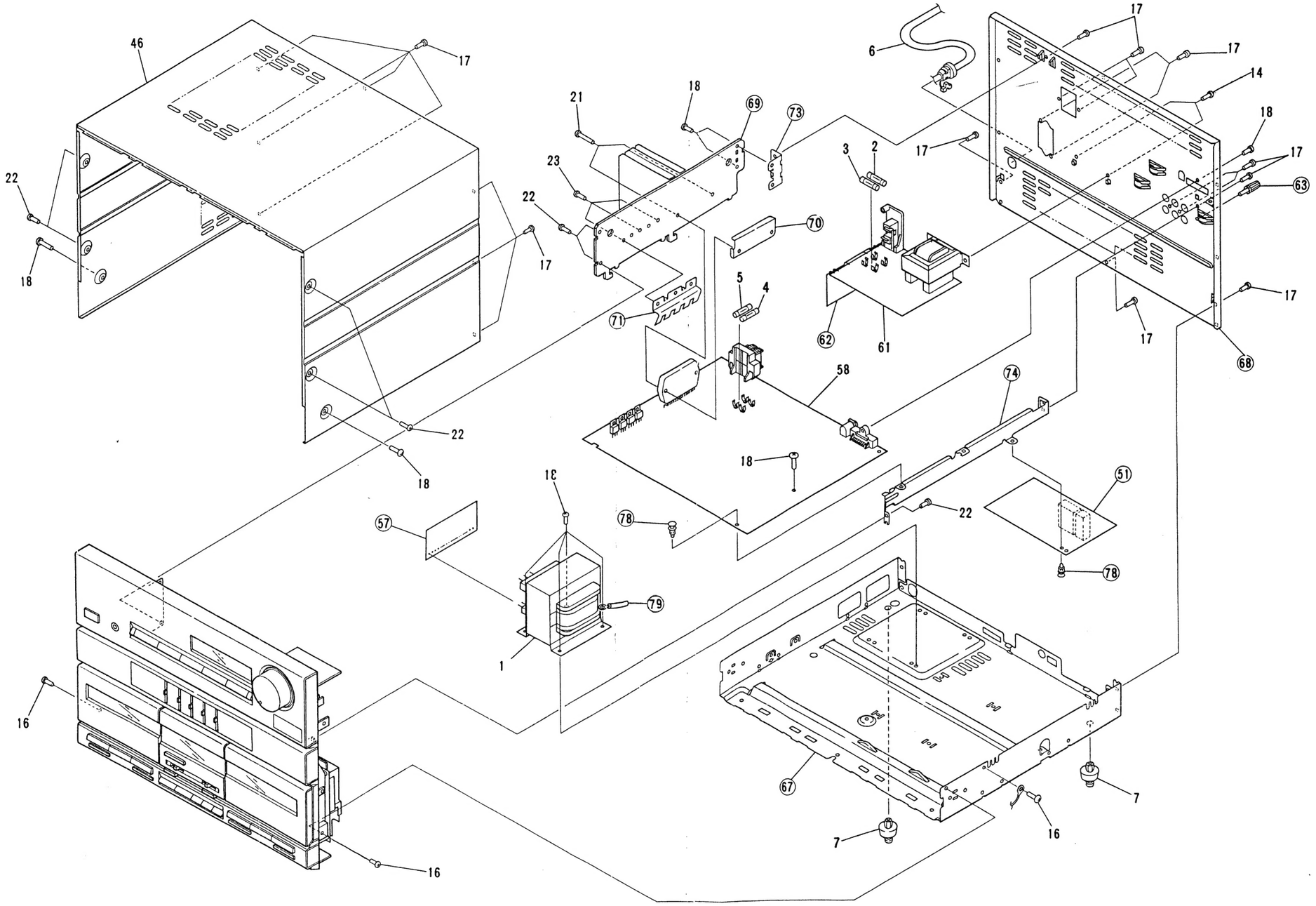
Mark	No.	Part No.	Description
⚠	1	ATS1179	POWER TRANSFORMER
⚠	2	AEK-507	FUSE FU2003(T800MA)
⚠	3	AEK-509	FUSE FU2001(T1.25A)
⚠	4	AEK-509	FUSE FU2004(T1.25A)
⚠	5	AEK-509	FUSE FU2005(T1.25A)
⚠	6	ADG-063	AC POWER CORD
	7	AEC-847	LEG ASS'Y
	8	ABH1050	SPRING
	9	ABH1051	SPRING
	10	AMR1656	EJECT LEVER-1
	11	AMR1657	EJECT LEVER-2
	12	AXA1005	DAMPER ASSEMBLY
	13	ABA-283	SCREW (STEEL)
	14	ABA1084	SCREW
	15	BBZ26P080FMC	SCREW
	16	BBZ30P060FMC	SCREW
	17	BBZ30P080FCU	SCREW
	18	BBZ30P080FZK	SCREW
	19	BPZ26P080FMC	SCREW
	20	NK90FUC	NUT
	21	VBZ30P160FMC	SCREW
	22	VPZ30P080FZK	SCREW
	23	VTZ30P100FZK	SCREW
	24	AMB1437	FRONT PANEL ASSEMBLY
	25	AAK1629	INDICATOR LENS
	26	AAK1660	DECORATIVE PLATE
	27	AAK1661	DECORATIVE PLATE
	28	AAK1662	DECORATIVE PLATE(DOOR)
	29	AAK1664	DECORATIVE PLATE(DOOR)
	30	AAB1089	KNOB(VOLUME)
	31	AAD1515	BUTTON(ASES)
	32	AAD1516	BUTTON(FUNCTION)
	33	AAD1520	BUTTON(POWER)
	34	AAD1525	BUTTON(PLAY)
	35	AAD1528	BUTTON(EJECT)
	36	AAD1529	BUTTON(REC)
	37	AAE1103	SLIDE KNOB
	38	AAN1120	CASSETTE DOOR
	39	AAN1121	CASSETTE DOOR
	40	ARB1154	OPERATING INSTRUCTION
	41	AXD1088	REMOTE CONTROL UNIT
	42	ARM1003	CAUTION CARD
	43	AHA1232	PAD(L)
	44	AHA1233	PAD(R)
	45	AHD1582	PAKING CASE
	46	ANE1180	BONNET
	47		
	48		DECK CENTER ASSY
	49	AWZ2218	AMP GEQ CTRL ASSY
	50	AWZ2219	DECK CTRL ASSY

Mark	No.	Part No	Description
	51		FUNCTION ASSY
	52		POWER SW ASSY
	53		DECK-1 SW ASSY
	54		DECK-2 SW ASSY
	55		
	56		HEAD PHONE ASSY
	57		TRANSE CONNECT ASSY
	58	AWZ2217	AF ASSY
	59		MAIN VR ASSY
	60		
	61	AWZ2241	POWER SUPPLY ASSY
	62		CONNECT ASSY
	63		TERMINAL SCREW
	64		EARTH LEAD
	65		MECHA UNIT
	66		MECHA UNIT
	67		CHASSIS
	68		REAR PANEL
	69		HEAT SINK
	70		PLATE
	71		PLATE
	72		PLATE A
	73		PLATE B
	74		PLATE
	75		SHIELD PLATE
	76		KEEP PLATE
	77		
	78		NYLON REVET
	79		BINDER
	80		
	81		SPACER
	82		
	83		"AAA" DRY CELL
	84		WARRANTY CARD
	85		SHEET
	86		SHEET

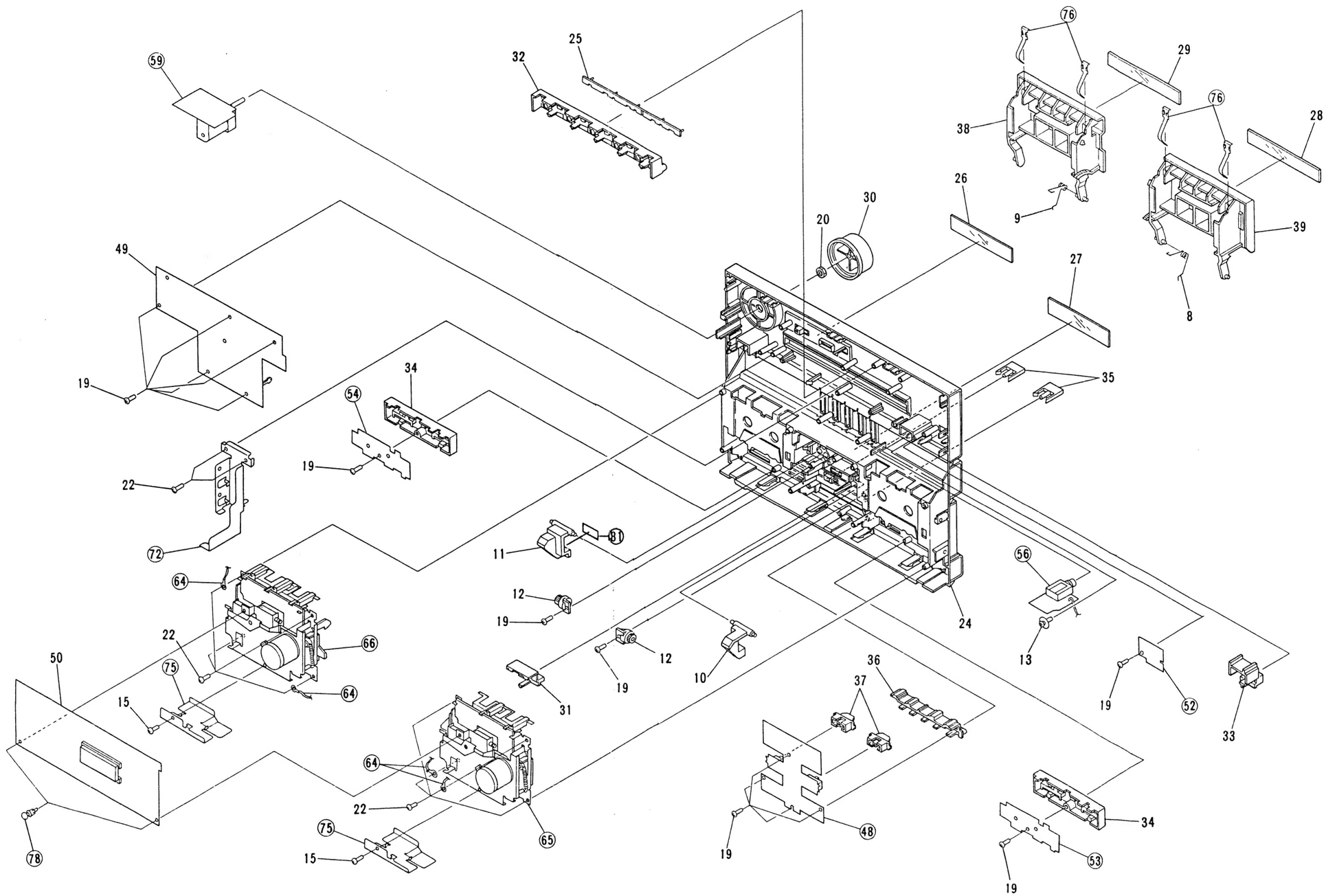
3.2 MAIN BODY SECTION



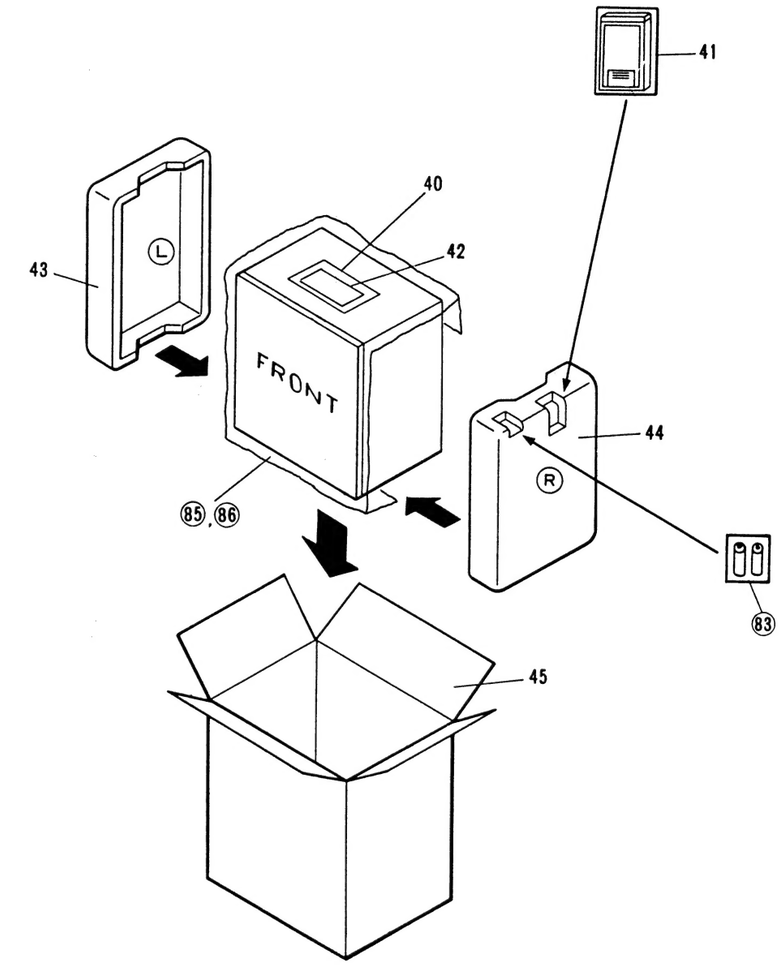
3.2 MAIN BODY SECTION



3.3 FRONT PANEL SECTION

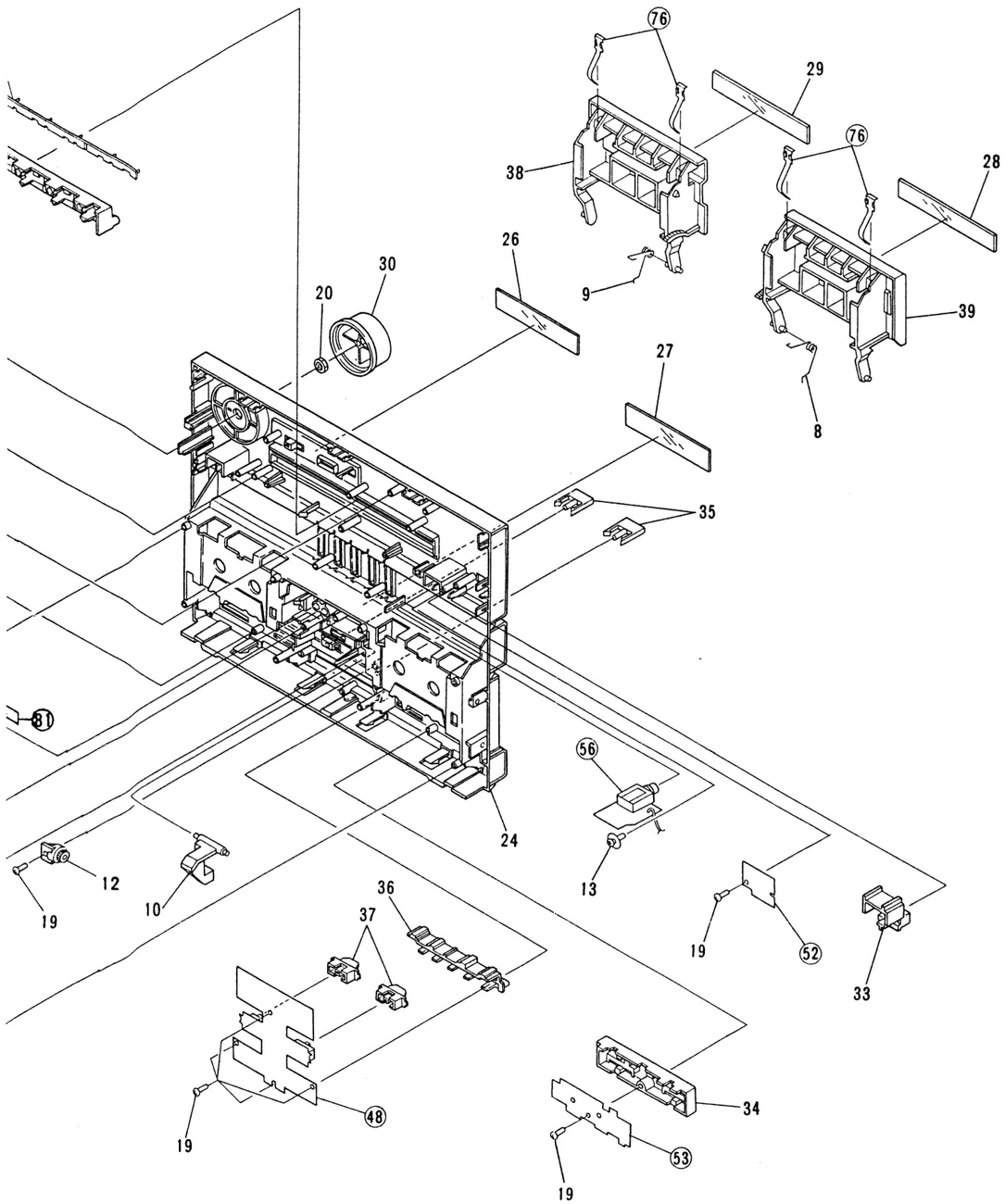


3.4 PACKING



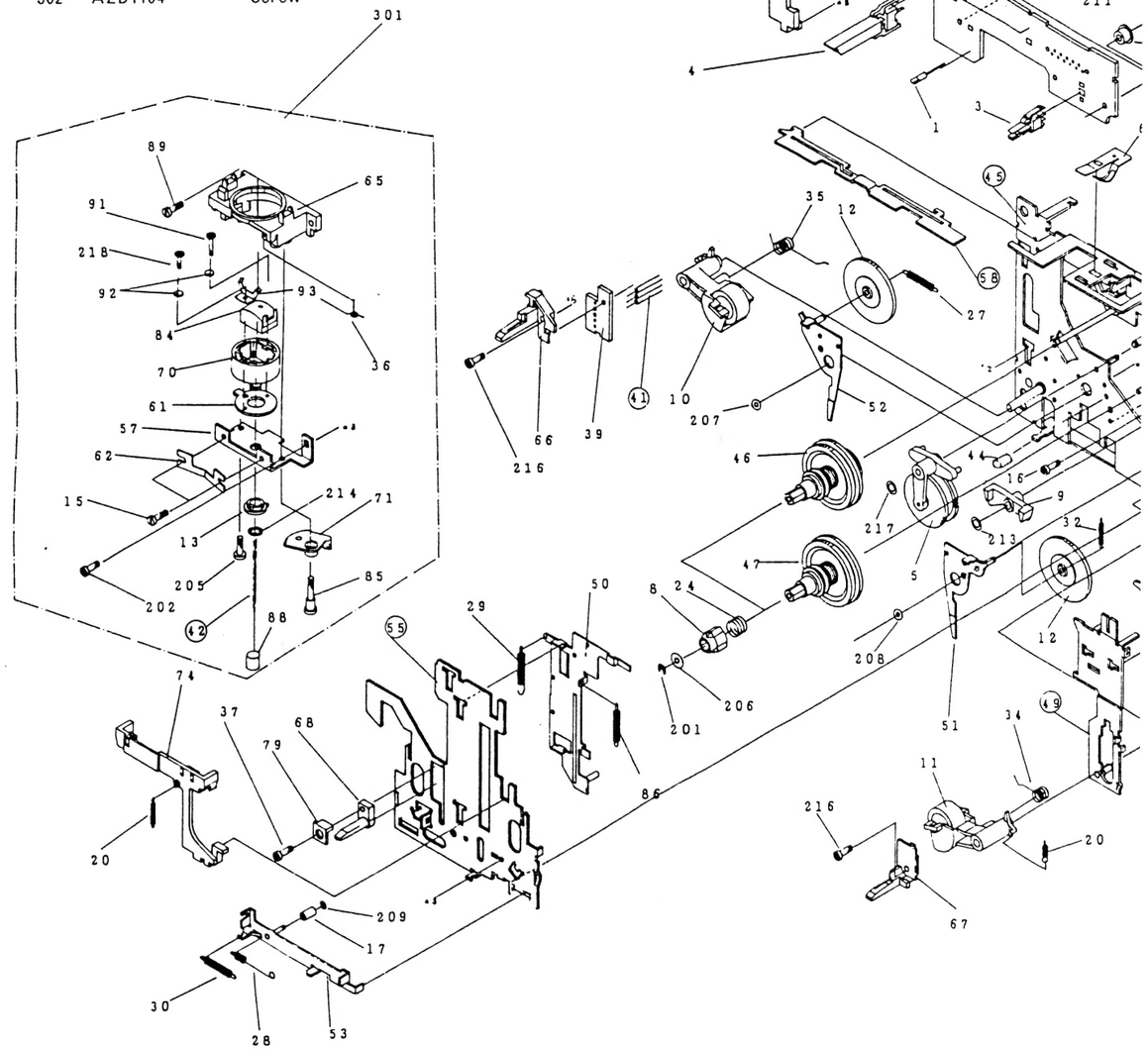
Parts list of Remote control Unit(AXD1088)

Mark	No.	Parts No.	Description
		AZN1856	Battery cover

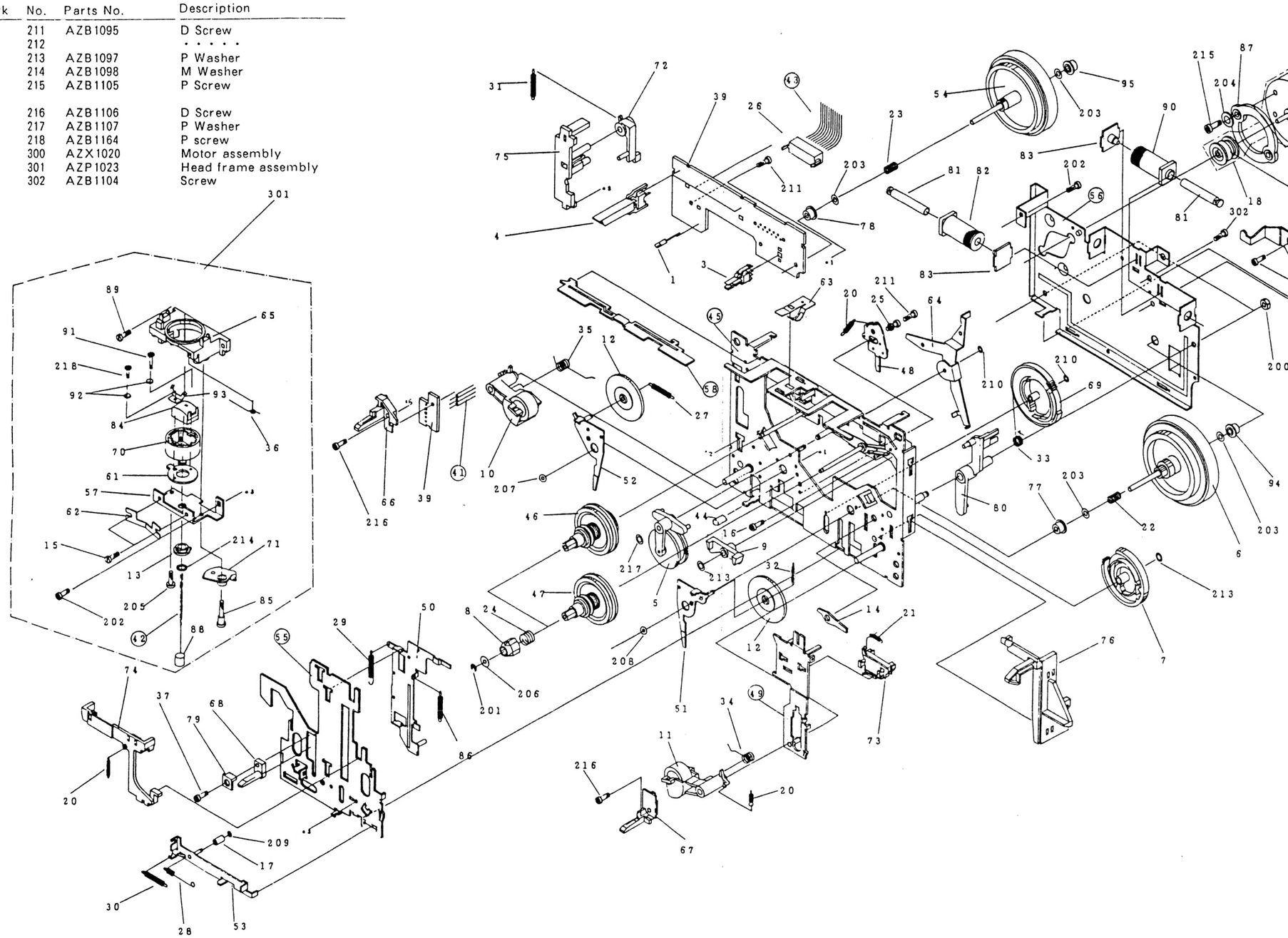


3.5 MECHA UNIT 1

Mark	No.	Parts No.	Description
	1	AZE1018	Hall IC
	2	AZX1019	Motor
	3	AZS1054	Leaf SW(MODE)
	4	AZS1034	Leaf SW (HALF,CrO2)
	5	AZN1286	Drive arm assembly
	6	AZN1287	FW assembly A
	7	AZN1288	Cam gear
	8	AZN1289	Reel
	9	AZN1290	FR arm
	10	AZN1797	P arm L assembly
	11	AZN1798	P arm R assembly
	12	AZN1293	Gear
	13	AZN1294	H Gear
	14	AZN1793	CUE arm
	15	AZB1079	Screw
	16	AZB1080	Screw
	17	AZN1296	Collar C
	18	AZN1297	Motor pully
	19	AZN1298	Belt
	20	AZN1299	Spring
	21	AZN1300	FR lever spring
	22	AZN1301	FWF spring
	23	AZN1302	FWR spring
	24	AZN1303	Spring
	25	AZB1088	Collar
	26	AZN1467	Cable holder
	27	AZN1306	Spring
	28	AZN1307	Spring
	29	AZN1308	Spring
	30	AZN1309	Spring
	31	AZN1310	Spring
	32	AZN1311	Spring
	33	AZN1312	Spring
	34	AZN1313	Spring
	35	AZN1314	Spring
	36	AZN1315	Spring
	37	AZB1081	Screw
	38	AZN1316	Nylon band
	39	AZN1835	P.C.Board
	40		Jumper wire
	41		Head lead
	42		Lead wire
	43		Lead wire
	44	AZN1468	Tube
	45		Mecha P.C.Board calking assembly
	46	AZN1319	R Reel assembly
	47	AZN1320	F Reel assembly
	48	AZN1321	Reverse arm calking assembly
	49		FR lever calking assembly
	50	AZN1795	PLAY lever calking assembly
	51	AZN1324	Gear arm R calking assembly
	52	AZN1325	Gear arm L calking assembly
	53	AZN1326	Head lever calking assembly
	54	AZN1327	FW assembly
	55		Head P.C.Board
	56		Plate(FLYWHEEL)
	57	AZN1328	Azimuth plate
	58		SW arm
	59	AZN1356	Eject arm L
	60	AZN1357	Eject arm R
	61	AZN1330	Head arm
	62	AZN1331	P Azimuth spring
	63	AZN1332	Cassette stopper
	64	AZN1333	Play trigger calking assembly
	65	AZN1334	Head frame
	66	AZN1335	Cassette guide L
	67	AZN1336	Cassette guide R
	68	AZN1337	Cassette guide
	69	AZN1338	Cam gear
	70	AZN1469	Head holder
	71	AZN1340	Head gear
	72	AZN1341	Eject arm
	73	AZN1342	Select lever
	74	AZN1343	Brake
	75	AZN1344	Eject lever L
	76	AZN1345	Ratch lever R
	77	AZN1346	Metal
	78	AZN1347	Metal
	79	AZN1348	Cushion
	80	AZN1349	Trigger arm
	81	AZN1350	Plunger
	82	AZS1035	Bobbin
	83	AZN1351	Solenoid plate calking assembly
	84	AZP1022	P Head
	85	AZB1099	Screw
	86	AZN1352	Spring
	87	AZN1304	Spacer
	88	AZN1470	Tube
	89	AZB1100	Screw
	90	AZS1036	Bobbin
	91	AZB1101	Screw
	92	AZB1102	Spring washer
	93	AZN1471	Head spring
	94	AZN1833	Capstan holder
	95	AZN1834	Capstan holder
	200	AZB1084	Nut
	201	AZB1085	E ring
	202	AZB1086	D Screw
	203	AZB1121	P Washer
	204	AZB1087	N Washer
	205	AZB1089	U Screw
	206	AZB1090	P Washer
	207	AZB1091	Oil cut
	208	AZB1092	Oil cut
	209	AZB1093	P Washer
	210	AZB1094	P Washer
	211	AZB1095	D Screw
	212		・・・・・
	213	AZB1097	P Washer
	214	AZB1098	M Washer
	215	AZB1105	P Screw
	216	AZB1106	D Screw
	217	AZB1107	P Washer
	218	AZB1164	P screw
	300	AZX1020	Motor assembly
	301	AZP1023	Head frame assembly
	302	AZB1104	Screw



Mark	No.	Parts No.	Description
	211	AZB1095	D Screw
	212		・・・・・
	213	AZB1097	P Washer
	214	AZB1098	M Washer
	215	AZB1105	P Screw
	216	AZB1106	D Screw
	217	AZB1107	P Washer
	218	AZB1164	P screw
	300	AZX1020	Motor assembly
	301	AZP1023	Head frame assembly
	302	AZB1104	Screw

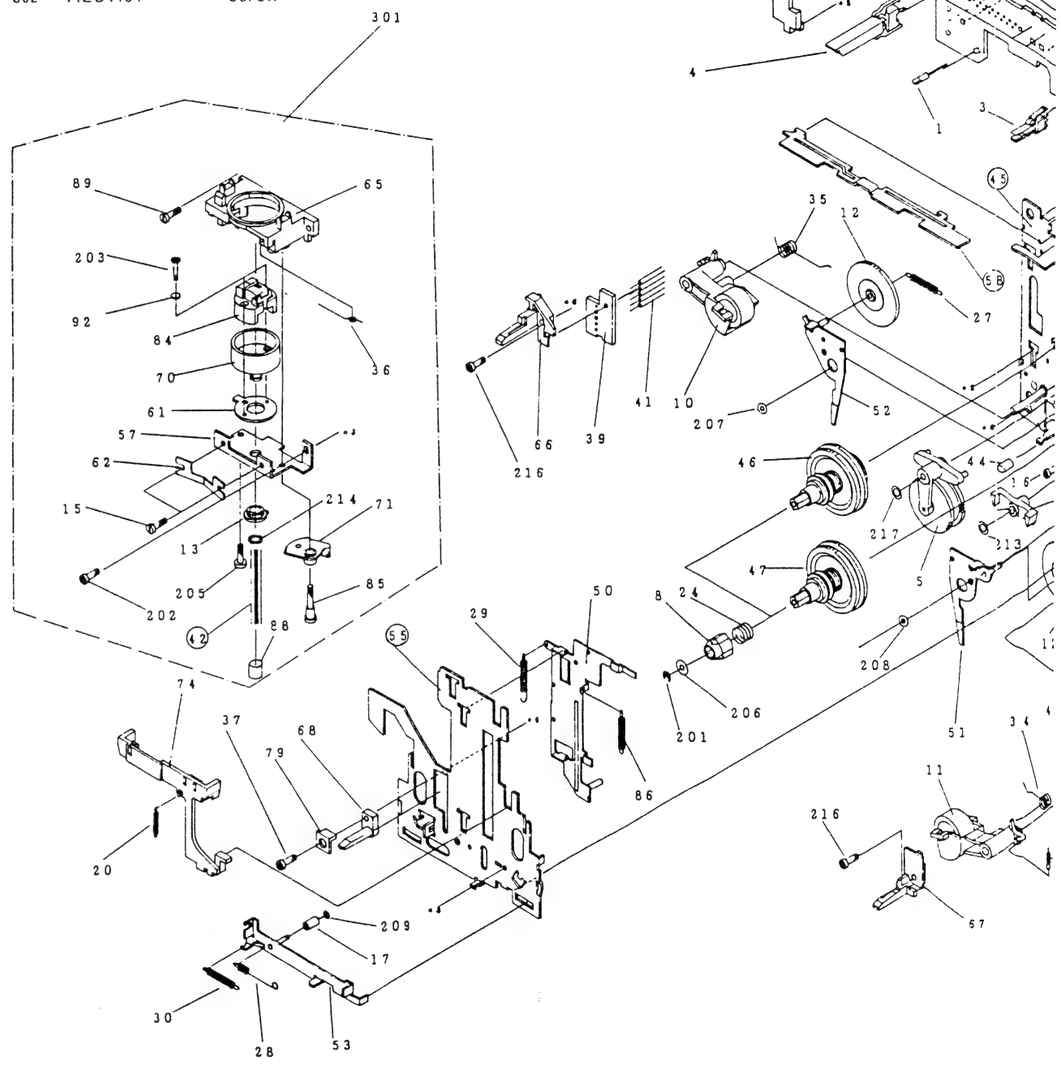


3.6 MECHA UNIT 2

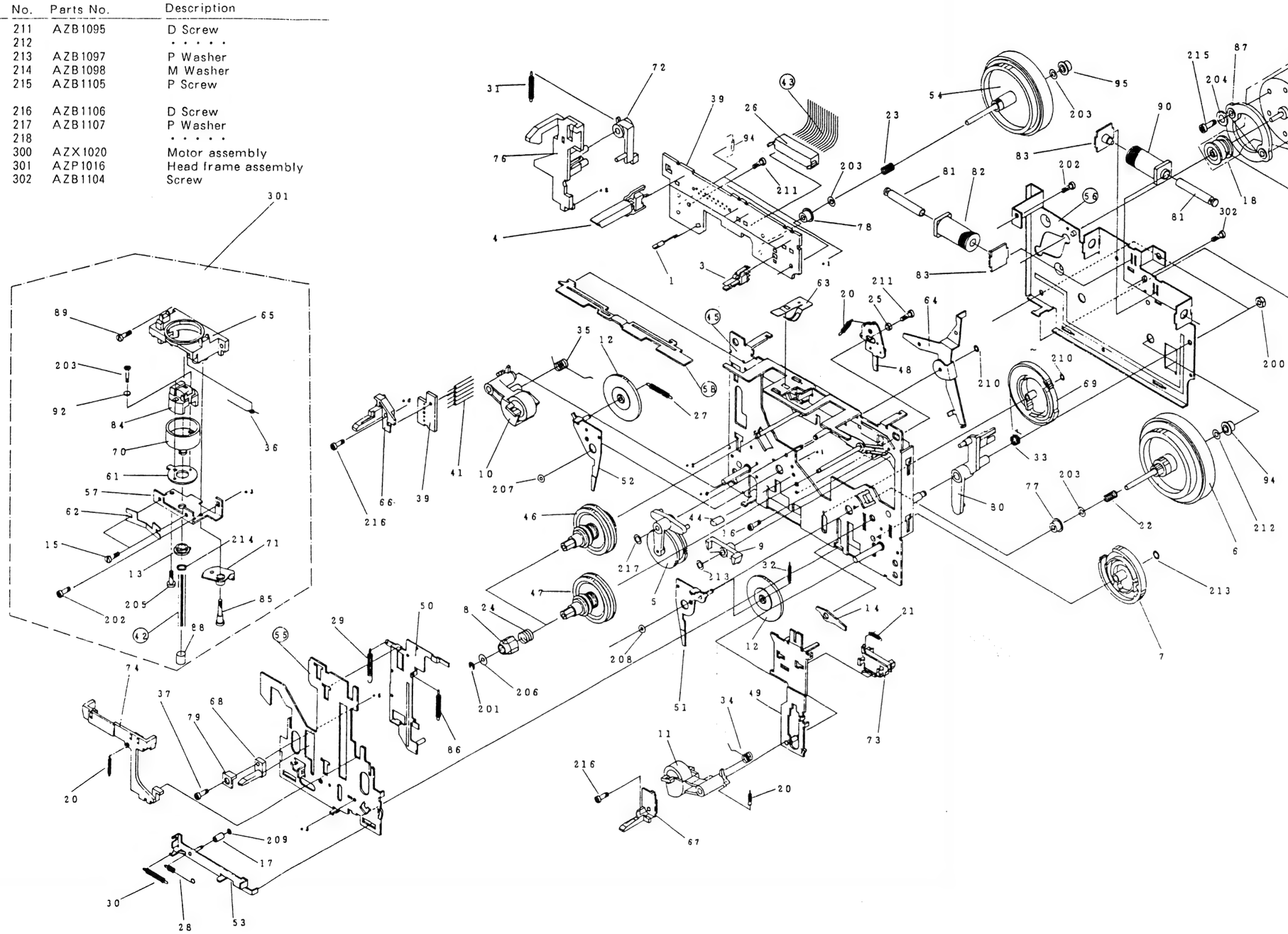
Mark	No.	Parts No.	Description
	1	AZE1018	Hall IC
	2	AZX1019	Motor
	3	AZS1054	Leaf SW(MODE)
	4	AZS1034	Leaf SW (ARF,HALF,CrO2)
	5	AZN1286	Drive arm assembly
	6	AZN1287	FW assembly A
	7	AZN1288	Cam gear
	8	AZN1289	Reel
	9	AZN1290	FR arm
	10	AZN1797	P arm L assembly
	11	AZN1798	P arm R assembly
	12	AZN1293	Gear
	13	AZN1294	H Gear
	14	AZN1793	CUE arm
	15	AZB1079	Screw
	16	AZB1080	Screw
	17	AZB1296	Collar C
	18	AZN1297	Motor pully
	19	AZN1298	Belt
	20	AZN1299	Spring
	21	AZN1300	FR lever spring
	22	AZN1301	FWF spring
	23	AZN1302	FWR spring
	24	AZN1303	Spring
	25	AZB1088	Collar
	26	AZN1305	Cable holder
	27	AZN1306	Spring
	28	AZN1307	Spring
	29	AZN1308	Spring
	30	AZN1309	Spring
	31	AZN1310	Spring
	32	AZN1311	Spring
	33	AZN1312	Spring
	34	AZN1313	Spring
	35	AZN1314	Spring
	36	AZN1315	Spring
	37	AZB1081	Screw
	38	AZN1316	Nylon band
	39	AZN1836	P.C.Board
	40		Jumper wire
	41		Head lead
	42		Lead wire
	43		Lead wire
	44	AZN1468	Tube
	45		Mecha P.C.Board calking assembly
	46	AZN1319	R Reel assembly
	47	AZN1320	F Reel assembly
	48	AZN1321	Reverse arm calking assembly
	49		FR lever calking assembly
	50	AZN1795	PLAY lever calking assembly
	51	AZN1324	Gear arm R calking assembly
	52	AZN1325	Gear arm L calking assembly

Mark	No.	Parts No.	Description
	53	AZN1326	Head lever calking assembly
	54	AZN1327	FW assembly
	55		Head P.C.Board
	56		Plate(FLYWHEEL)
	57	AZN1328	Azimuth plate
	58		SW arm
	59		.....
	60		.....
	61	AZN1330	Head arm
	62	AZN1331	Azimuth spring
	63	AZN1332	Cassette stopper
	64	AZN1333	Play trigger calking assembly
	65	AZN1334	Head frame
	66	AZN1335	Cassette guide L
	67	AZN1336	Cassette guide R
	68	AZN1337	Cassette guide
	69	AZN1338	Cam gear
	70	AZN1469	Head holder
	71	AZN1340	Head gear
	72	AZN1341	Eject arm
	73	AZN1342	Select lever
	74	AZN1343	Brake
	75		.....
	76	AZN1353	Ratch lever R
	77	AZN1346	Metal
	78	AZN1347	Metal
	79	AZN1348	Cushion
	80	AZN1349	Trigger arm
	81	AZN1350	Plunger
	82	AZS1035	Bobbin
	83	AZN1351	Solenoid plate calking assembly
	84	AZP1014	R/P/E Head
	85	AZB1099	Screw
	86	AZN1352	Spring
	87	AZN1304	Spacer
	88	AZN1470	Tube
	89	AZB1100	Screw
	90	AZS1036	Bobbin
	91	AZB1101	Screw
	92	AZB1102	Spring washer
	93		.....
	94	AZN1833	Capstan holder
	95	AZN1834	Capstan holder
	200	AZB1084	Nut
	201	AZB1085	E ring
	202	AZB1086	D Screw
	203	AZB1121	P Washer
	204	AZB1087	N Washer
	205	AZB1089	U Screw
	206	AZB1090	P Washer
	207	AZB1091	Oil cut
	208	AZB1092	Oil cut
	209	AZB1093	P Washer
	210	AZB1094	P Washer

Mark	No.	Parts No.	Description
	211	AZB1095	D Screw
	212		.....
	213	AZB1097	P Washer
	214	AZB1098	M Washer
	215	AZB1105	P Screw
	216	AZB1106	D Screw
	217	AZB1107	P Washer
	218		.....
	300	AZX1020	Motor assembly
	301	AZP1016	Head frame assembly
	302	AZB1104	Screw

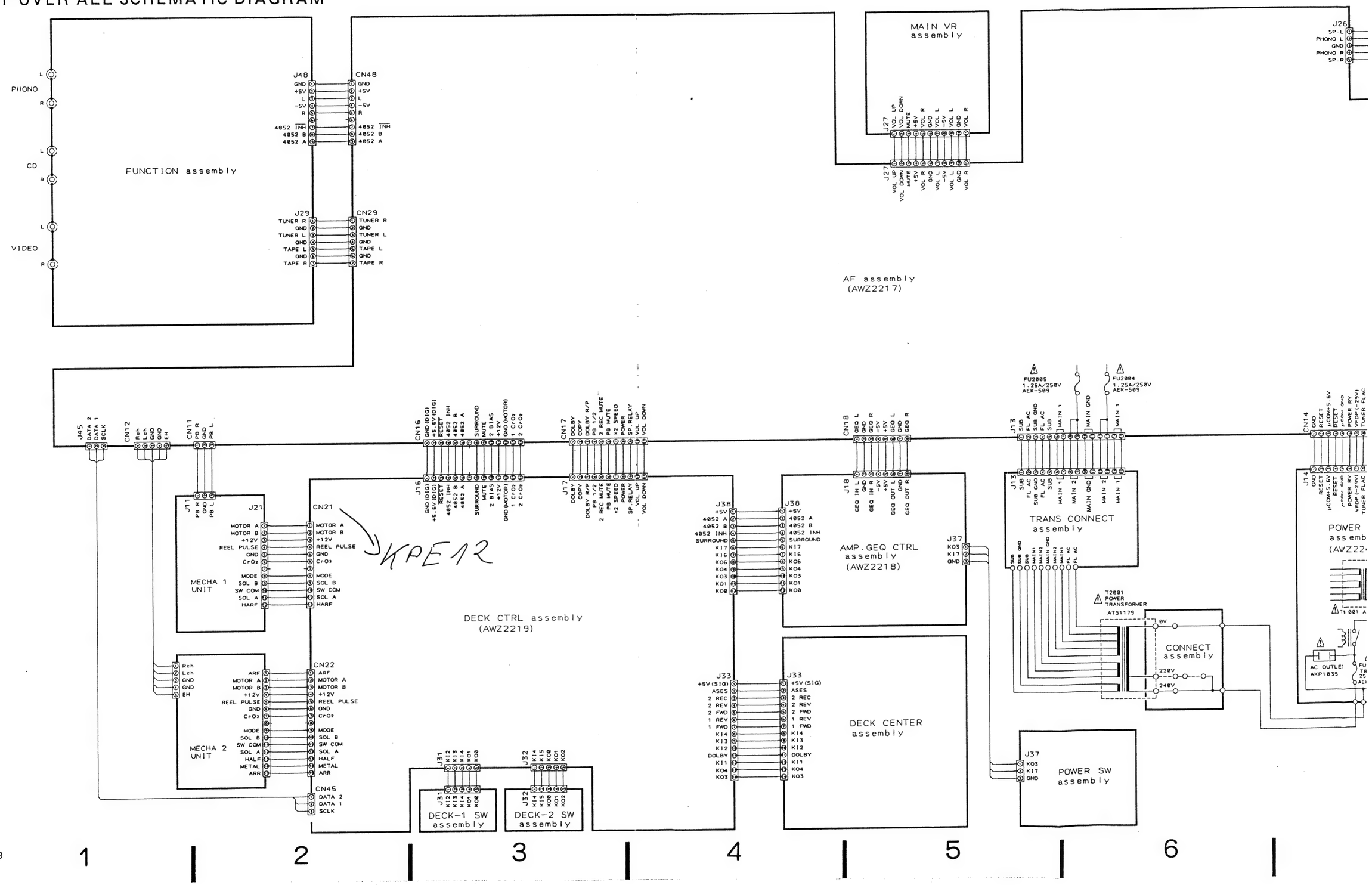


Mark	No.	Parts No.	Description
	211	AZB1095	D Screw
	212		• • • • •
	213	AZB1097	P Washer
	214	AZB1098	M Washer
	215	AZB1105	P Screw
	216	AZB1106	D Screw
	217	AZB1107	P Washer
	218		• • • • •
	300	AZX1020	Motor assembly
	301	AZP1016	Head frame assembly
	302	AZB1104	Screw

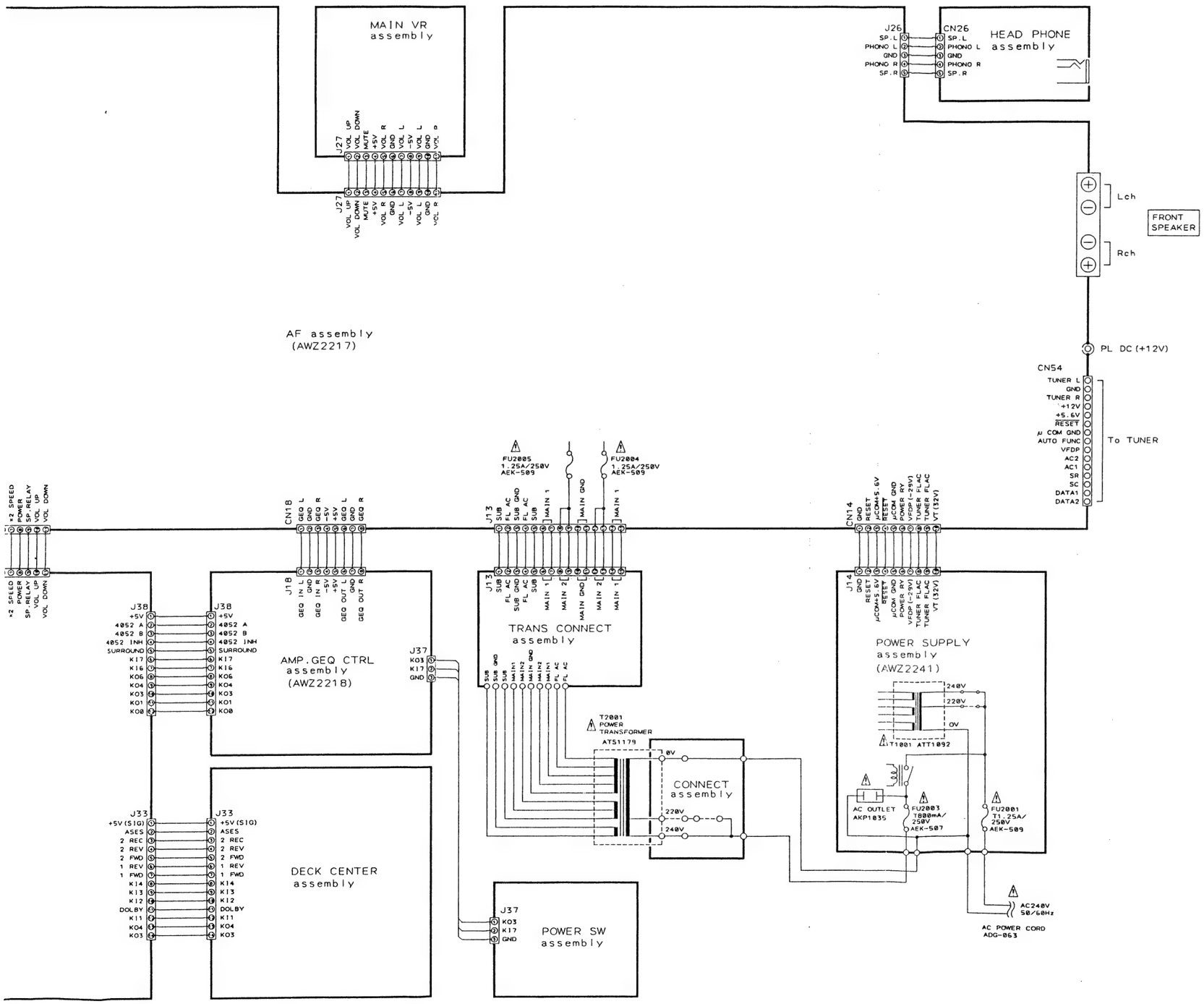


4. SCHEMATIC DIAGRAM AND P.C.BOARD CONNECTION DIAGRAM

4.1 OVER ALL SCHEMATIC DIAGRAM



ION DIAGRAM



1. RESISTORS:
Indicated in Ω, ¼W, ⅛W, ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) : ±1%, (G) : ±2%, (K) : ±10% (M); ±20% tolerance

2. CAPACITORS:
Indicated in capacity (μF)/voltage (V) unless otherwise noted p : pF
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT:
: Signal voltage at (33 W + 33 W 8Ω)output (1kHz)
: DC voltage (V) at no input signal
Value in ( ) is DC voltage at rated power.
⇦ mA : DC current at no input signal

4. OTHERS:
➡ : Signal route.
⊘ : Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

SWITCHES:

AMP,GEQ CTRL assembly (AWZ2218)
S701-S705 TACT SW

DECK-1 SW assembly
S811-S815 TACT SW

DECK-2 SW assembly
S821-S825 TACT SW

DECK CENTER assembly
S847 DOLBY OFF-ON
S848 REVERSE MODE

S841-S846 TACT SW

POWER SW assembly
S707 POWER

The underline indicates the switch position

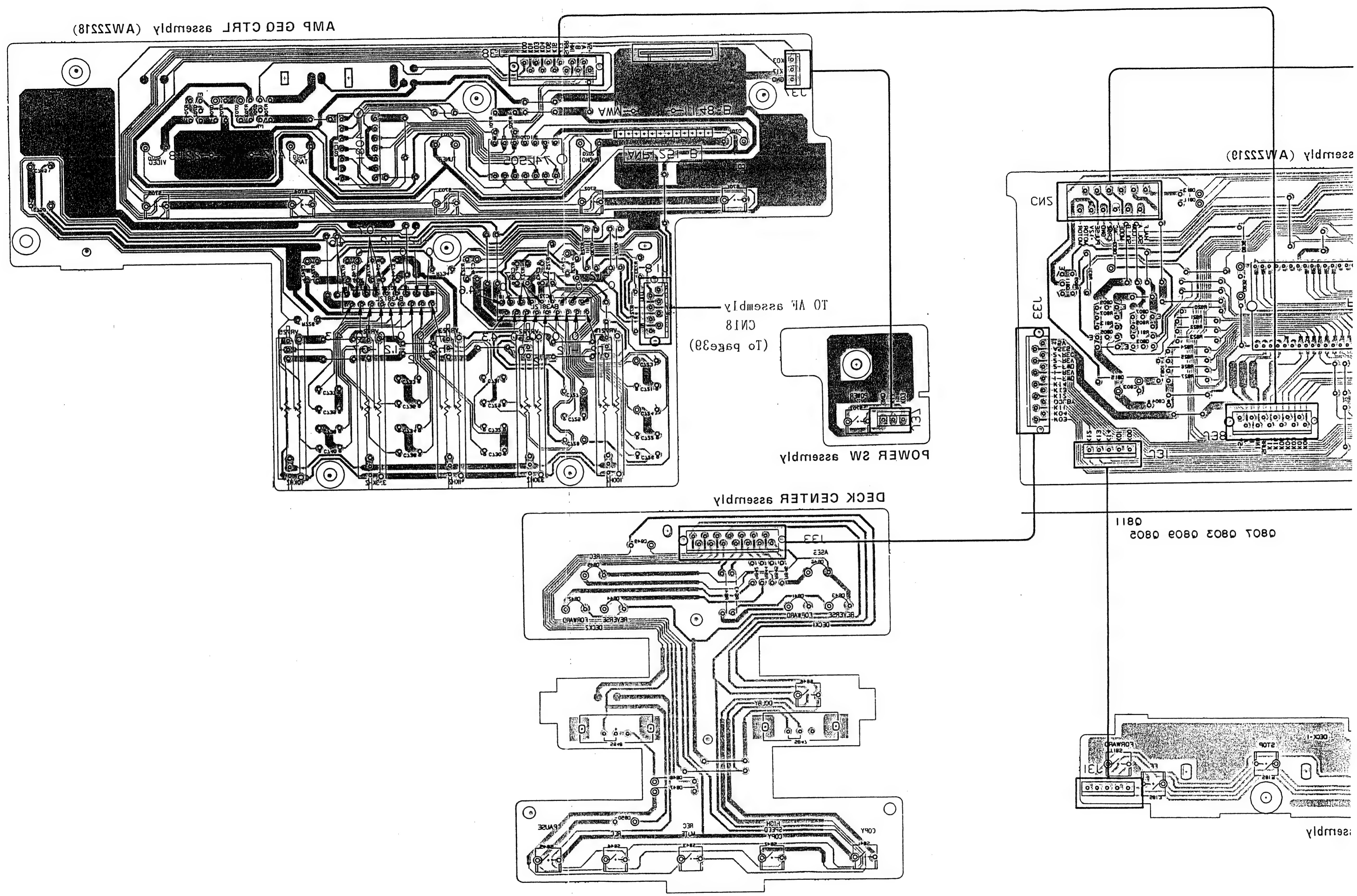
12 11 10 9 8 7

A

B

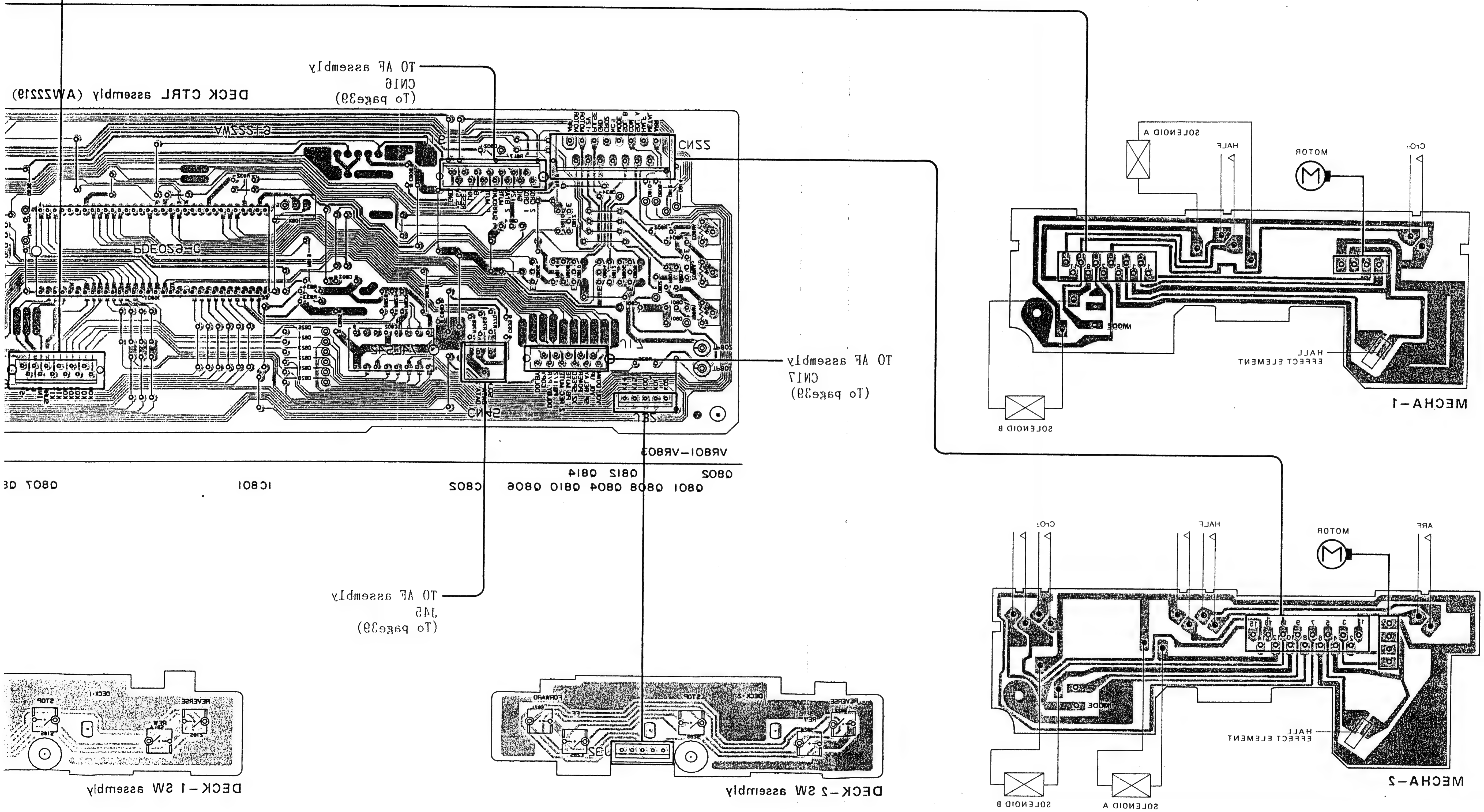
C

D

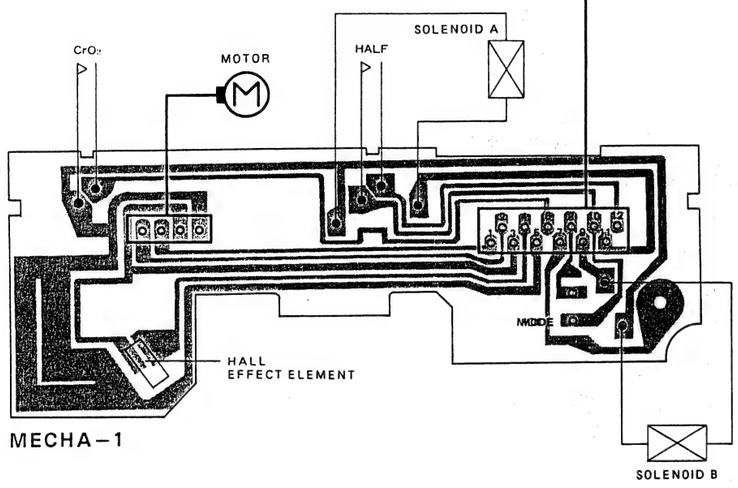


12 11 10 9 8 7

NOTE:
This picture shows the foil side of the printed circuit.



4.2 AMP, GEQ CTRL (AWZ2218), DECK-1SW, DECK-2SW, DECK CTRL (AWZ2219), DECK CENTER assembly, MECHA-1 and MECHA-2 UNIT



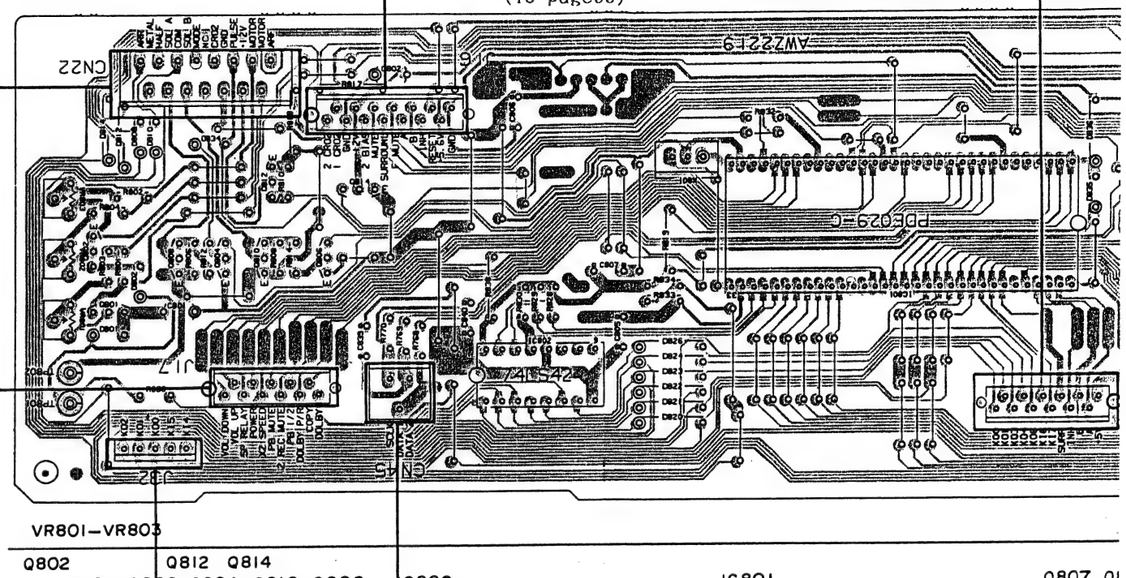
MECHA-1

MECHA-2

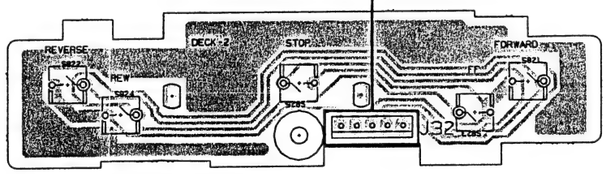
TO AF assembly
CN17
(To page39)

TO AF assembly
CN16
(To page39)

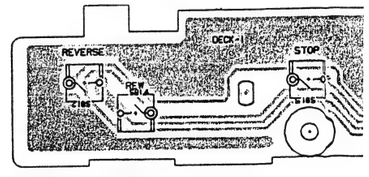
DECK CTRL assembly (AWZ2219)



TO AF assembly
J45
(To page39)

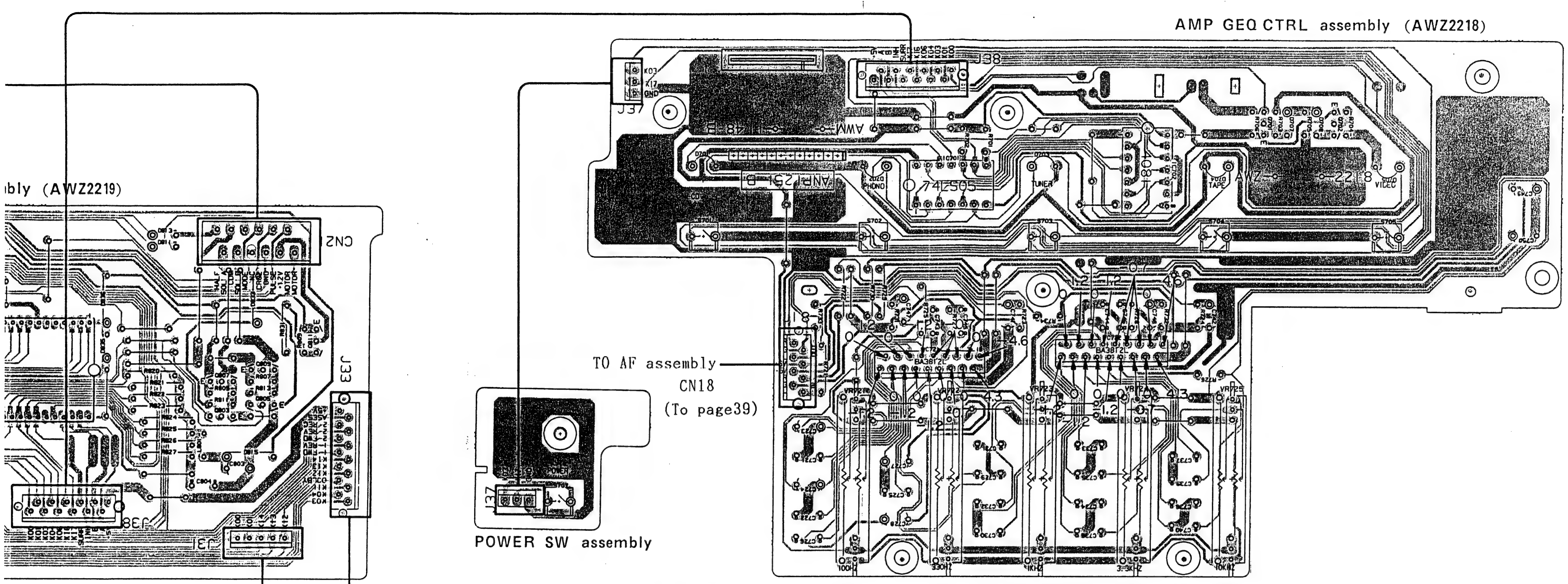


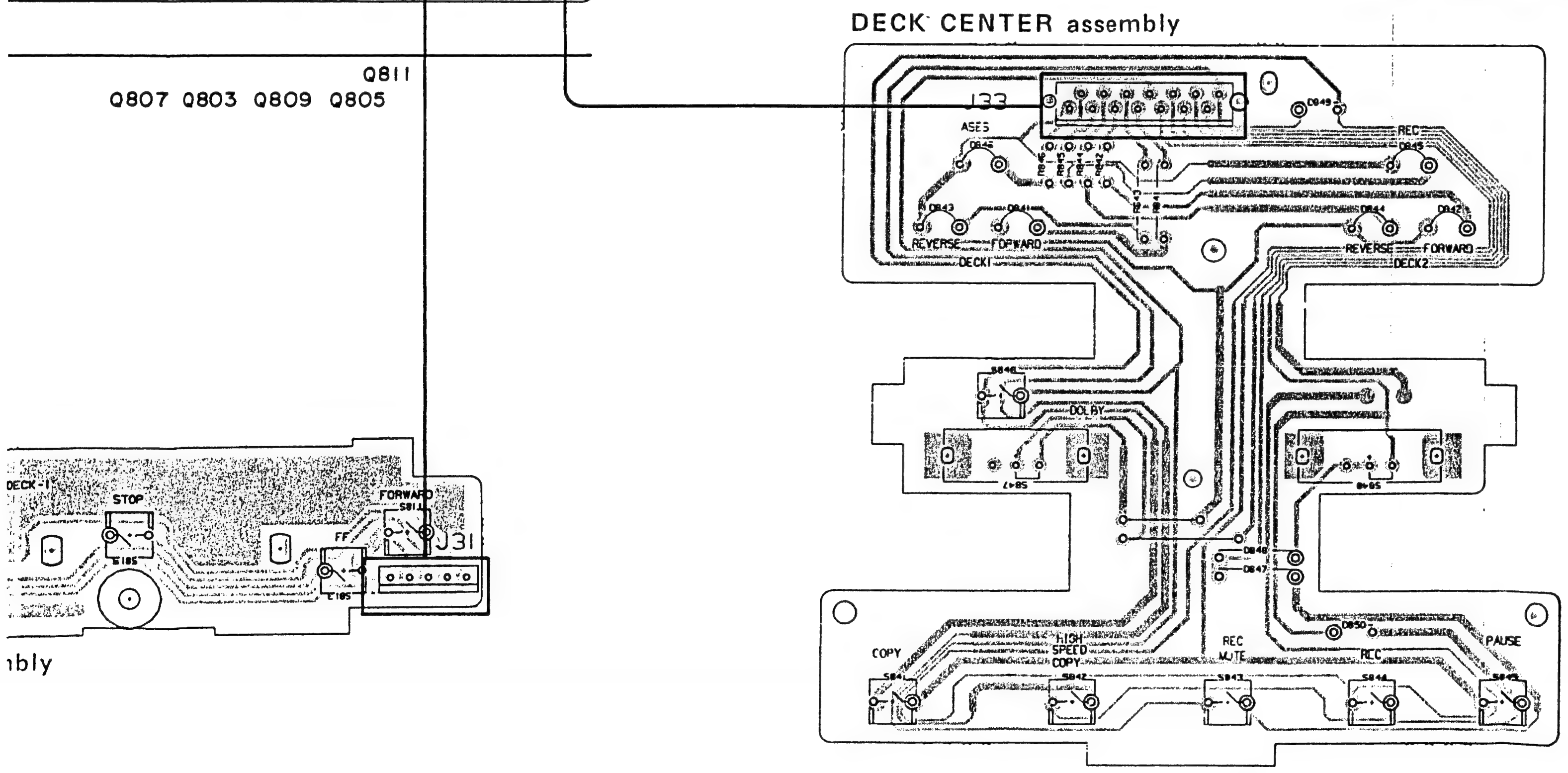
DECK-2 SW assembly



DECK-1 SW assembly

7	8	9	10	11	12





NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

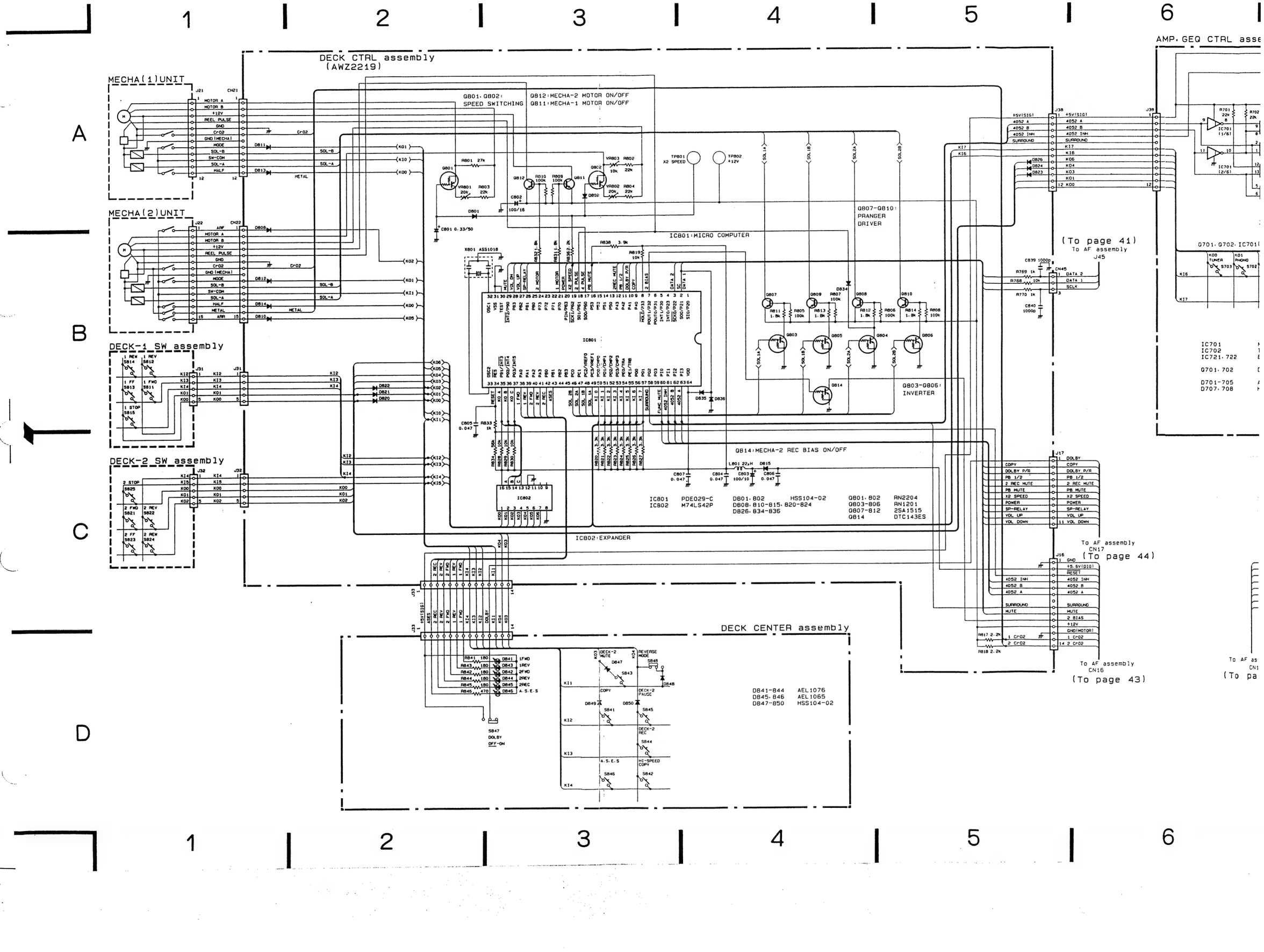
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 E	E or E	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Capacitor (Polarity)
C518		Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

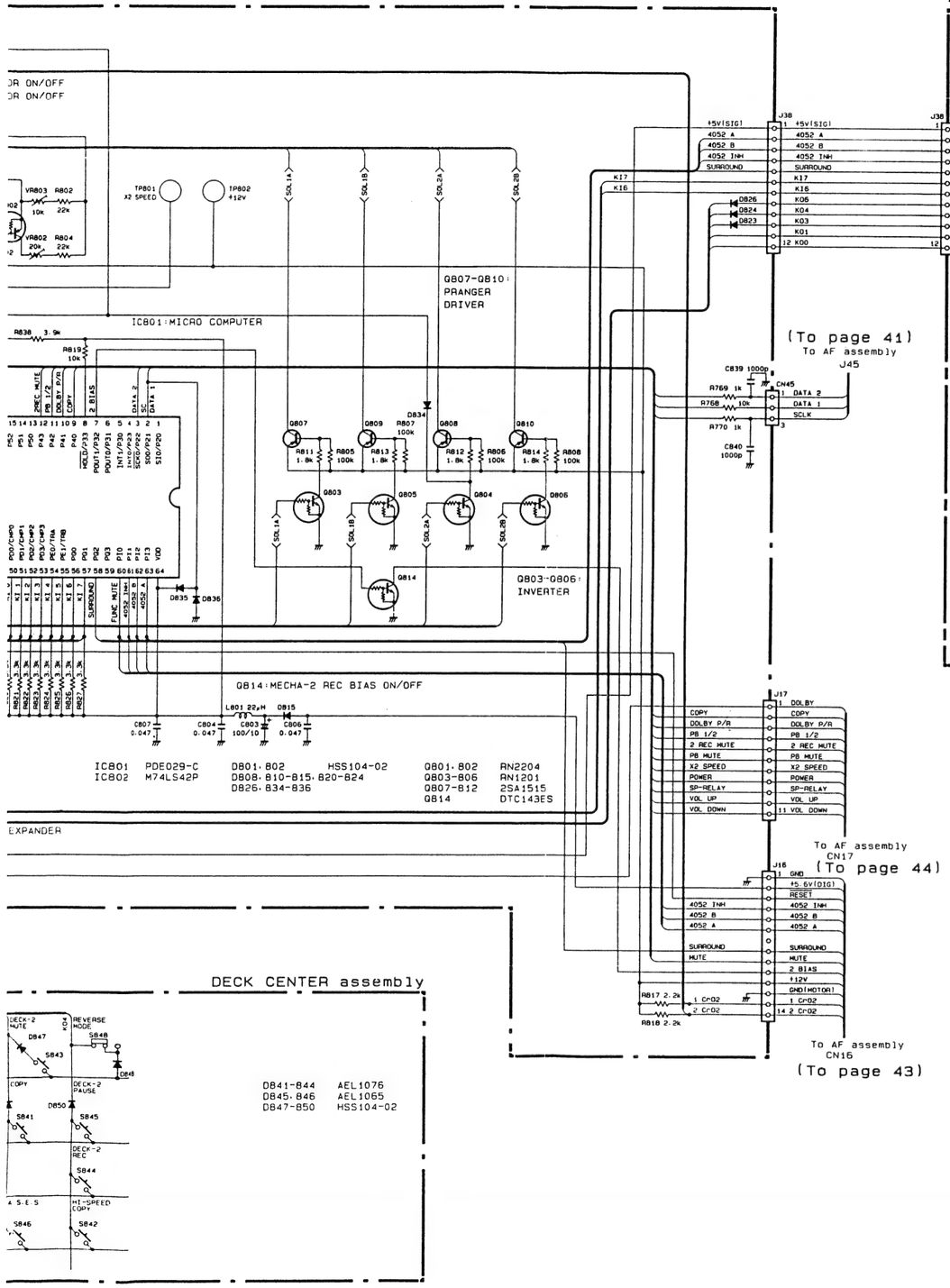
3. The capactor terminal marked with ◎(double circles) shows negatine termianl.
4. The diode terminal marked with ◎(double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

7	8	9	10	11	12

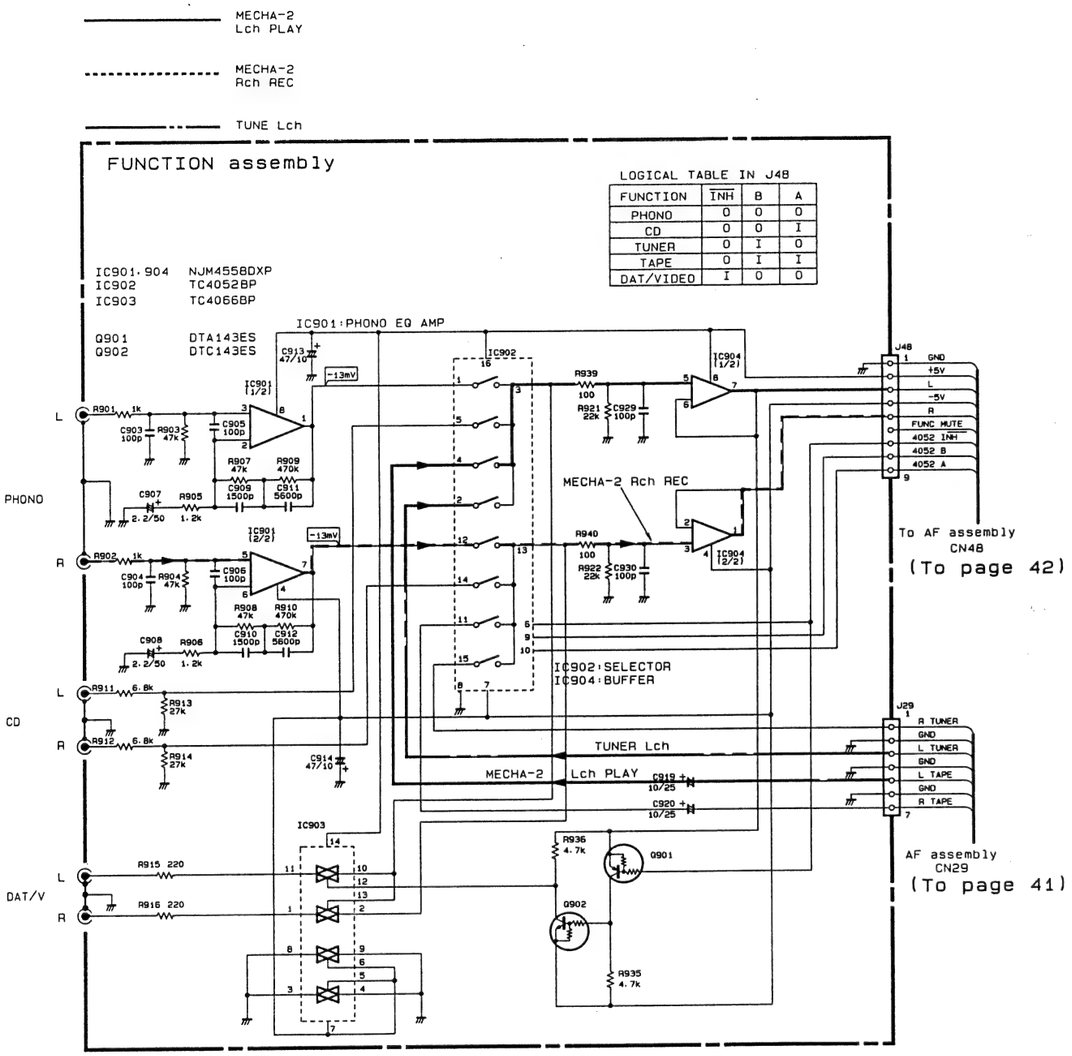

DECK CTRL assembly
(AWZ2219)
MECHA(1)UNIT
MECHA(2)UNIT
DECK-1 SW assembly
DECK-2 SW assembly
Q801·Q802:
SPEED SWITCHING
Q812:MECHA-2 MOTOR ON/OFF
Q811:MECHA-1 MOTOR ON/OFF
IC801:MICRO COMPUTER
Q807-Q810:
PRANGER
DRIVER
Q803-Q806:
INVERTER
Q814:MECHA-2 REC BIAS ON/OFF
IC802:EXPANDER
IC801 PDE029-C
IC802 M74LS42P
D801·802 HSS104-02
D808·810-815·820-824
D826·834-836
Q801·802 RN2204
Q803-806 RN1201
Q807-812 2SA1515
Q814 DTC143ES
(To page 41)
To AF assembly
J45
AMP·GEQ CTRL asse
IC701 IC702 IC721·722
Q701·702 IC701
D701-705 D707·708
DECK CENTER assembly
D841-844 AEL1076
D845·846 AEL1065
D847-850 HSS104-02
To AF assembly
CN17
(To page 44)
To AF assembly
CN16
(To page 43)
To AF as
CN1
(To pa

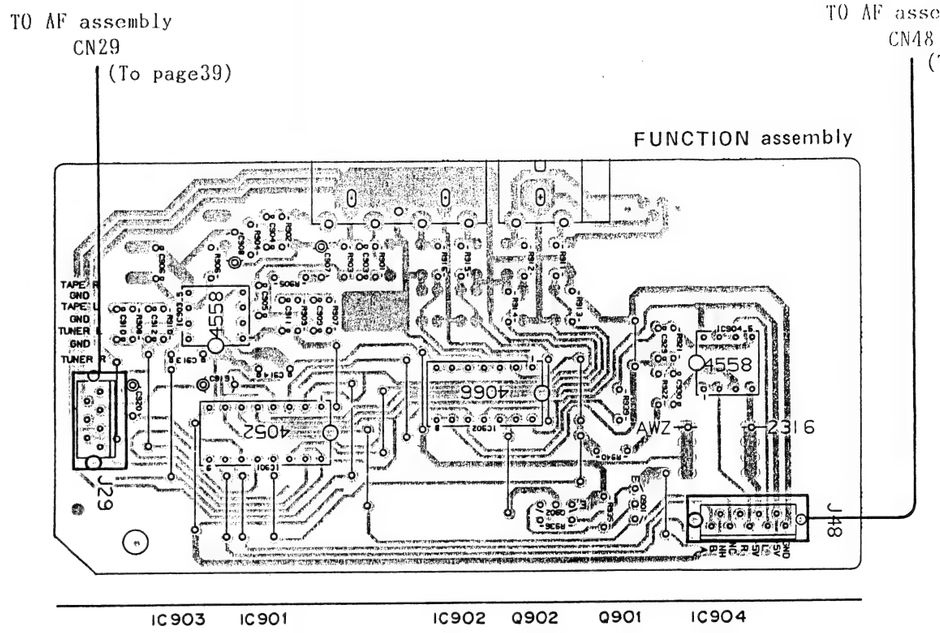
4 5 6 7 8 9

A B C D


OR ON/OFF
OR ON/OFF
VR803 10k
R802 22k
VR802 20k
R804 22k
TP801 X2 SPEED
TP802 +12V
IC801: MICRO COMPUTER
R838 3.9k
R819 10k
2REC MUTE
PB 1/2
DOLBY P/N
COPY
2 BIAS
DATA 2
SCK
DATA 1
PS2
PS1
P50
P43
P42
P41
P40
HOLD/J33
PDU11/P32
PDU10/P31
INT1/P30
INT0/P23
SIN/P22
SOO/P21
S10/P20
P00/CMP0
P01/CMP1
P02/CMP2
P03/CMP3
RES/TRA
P07
P00
P01
P02
P03
P10
P11
P12
P13
VDD
KI1
KI2
KI3
KI4
KI5
KI6
KI7
SURROUND
TONE MUTE
4052 B
4052 A
R831 3.3k
R832 3.3k
R833 3.3k
R834 3.3k
R835 3.3k
R836 3.3k
R837 3.3k
SOL14
SOL18
SOL24
SOL28
Q807
Q809
D834
Q808
Q810
R807 100k
R811 1.8k
R805 100k
R813 1.8k
R812 1.8k
R806 100k
R814 1.8k
R808 100k
Q803
Q805
Q804
Q806
Q814
D835
D836
Q803-Q806: INVERTER
Q807-Q810: PRANGER DRIVER
Q814: MECHA-2 REC BIAS ON/OFF
C807 0.047
C804 0.047
L801 22μH
C803 100/10
D815
C806 0.047
IC801 PDE029-C
IC802 M74LS42P
D801, 802 HSS104-02
D808, 810-815, 820-824
D826, 834-836
Q801, 802 RN2204
Q803-806 RN1201
Q807-812 2SA1515
Q814 DTC143ES
EXPANDER
+5V(SIG)
4052 A
4052 B
4052 INH
SURROUND
KI7
KI6
D826
D824
D823
KO1
KO0
J38
C839 1000p
R769 1k
R768 10k
R770 1k
C840 1000p
CN45
DATA 2
DATA 1
SCLK
(To page 41)
To AF assembly
J45
J17
DOLBY
COPY
DOLBY P/R
PB 1/2
2 REC MUTE
PB MUTE
X2 SPEED
POWER
SP-RELAY
VOL UP
VOL DOWN
To AF assembly
CN17
(To page 44)
J16
GND
+5.6V(DIG)
RESET
4052 INH
4052 B
4052 A
SURROUND
MUTE
2 BIAS
+12V
GND(MOTOR)
1 CrO2
2 CrO2
RB17 2.2k
RB18 2.2k
To AF assembly
CN16
(To page 43)
AMP. GEQ CTRL assembly (AWZ2218)
IC702: IND SELECTOR
IC701(1/6), (2/6): INVERTER
Q701, Q702, IC701(3/6)-(6/6): IND DRIVER
KO0 TUNER S703
KO1 PHONO S702
KO3 VIDEO S705
KO4 TAPE S704
KO6 CD S701
Q701
Q702
D707
D708
R705 4.7k
R703 220
R704 220
R701 22k
R702 22k
D702 PHONO
D701 CD
D703 TUNER
D704 TAPE
VIDEO D705
IC701 M74LS05P
IC702 TC40818P
IC721, 722 BA3812L
Q701, 702 DTA143ES
D701-705 AEL1065
D707, 708 HSS104-02
IC721, 722: GEQ CONTROL
IC721
IC722
100Hz L
100Hz R
330Hz L
330Hz R
1kHz L
1kHz R
3.3kHz R
10kHz L
10kHz R
3.3kHz L
C723 0.68/50
C724 0.68/50
C743 100p
C745 330p
C747 10/25
C721 0.039
C722 0.039
R725 2.7k
R727 2.7k
C726 0.018
C725 0.018
C729 3900p
C728 0.15/50
C727 0.15/50
C731 0.068
R721 33k
C741 10/25
R723 10k
C735 0.015
C732 0.068
C744 100p
C746 330p
C748 10/25
C734 1800p
C730 3900p
R726 2.7k
R728 2.7k
C733 1800p
C738 390p
C737 390p
C742 10/25
R722 10k
R724 33k
C740 6800p
C739 6800p
VR721 (100Hz)
VR722 (330Hz)
VR723 (1kHz)
VR724 (3.3kHz)
VR725 (10kHz)
J18
GEQ IN L
GND
GEQ IN A
-5V
+5V
GEQ OUT L
GND
GEQ OUT A
R730 56
R729 56
R733 100
R734 100
C750 47/16
C749 47/16
R731 10
R732 10k
To AF assembly
CN18
(To page 44)
DECK CENTER assembly
DECK-2 MUTE
REVERSE MODE
D847
S848
S843
D848
COPY
DECK-2 PAUSE
D850
S841
S845
DECK-2 REC
S844
A.S.E.S
HI-SPEED COPY
S846
S842
D841-844 AEL1076
D845, 846 AEL1065
D847-850 HSS104-02

4.3 FUNCTION assembly





NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 E	or	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513		Capacitor (Polarity)
C518		Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

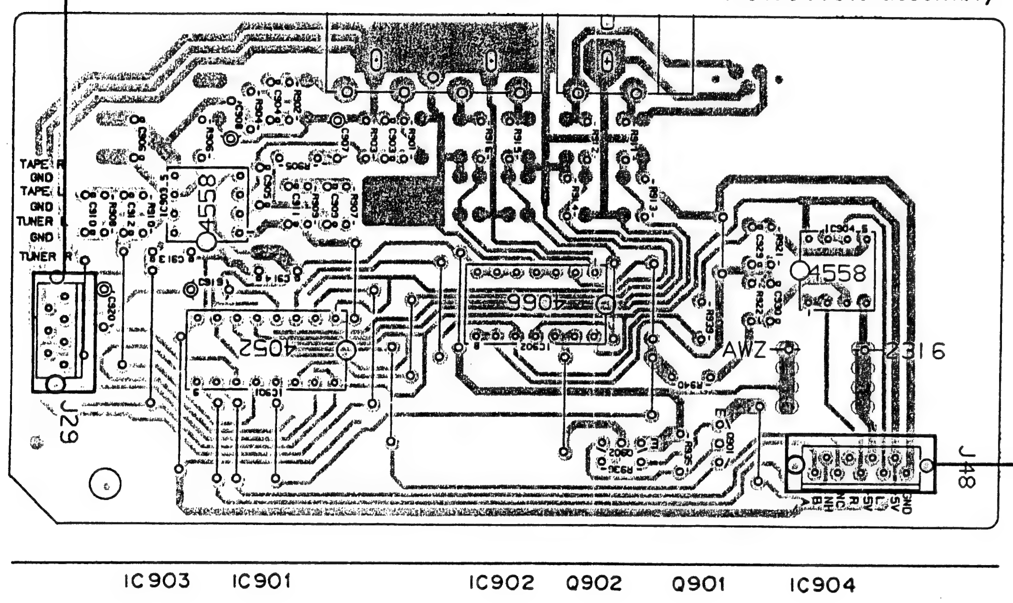
3. The capactor terminal marked with ◎(double circles) shows negatine termianl.
4. The diode terminal marked with ◎(double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

NOTE:
This picture shows the foil side of the printed circuit.

A

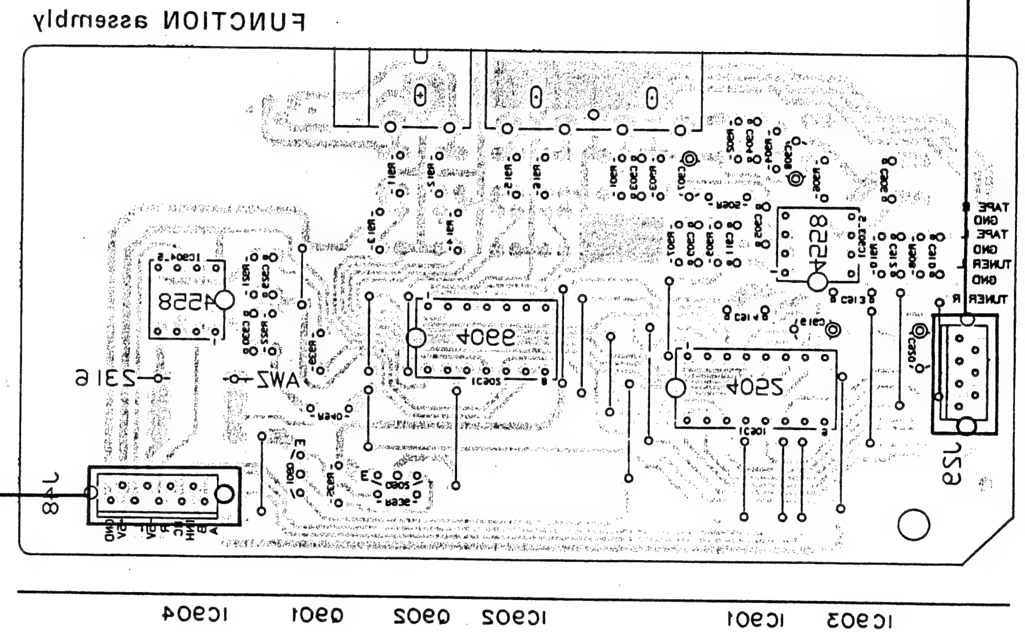
TO AF assembly
CN29
(To page39)

TO AF assembly
CN48
(To page39)



(To page39)
CN48
TO AF assembly

TO AF assembly
CN29
(To page39)



B

C

D

NOTE

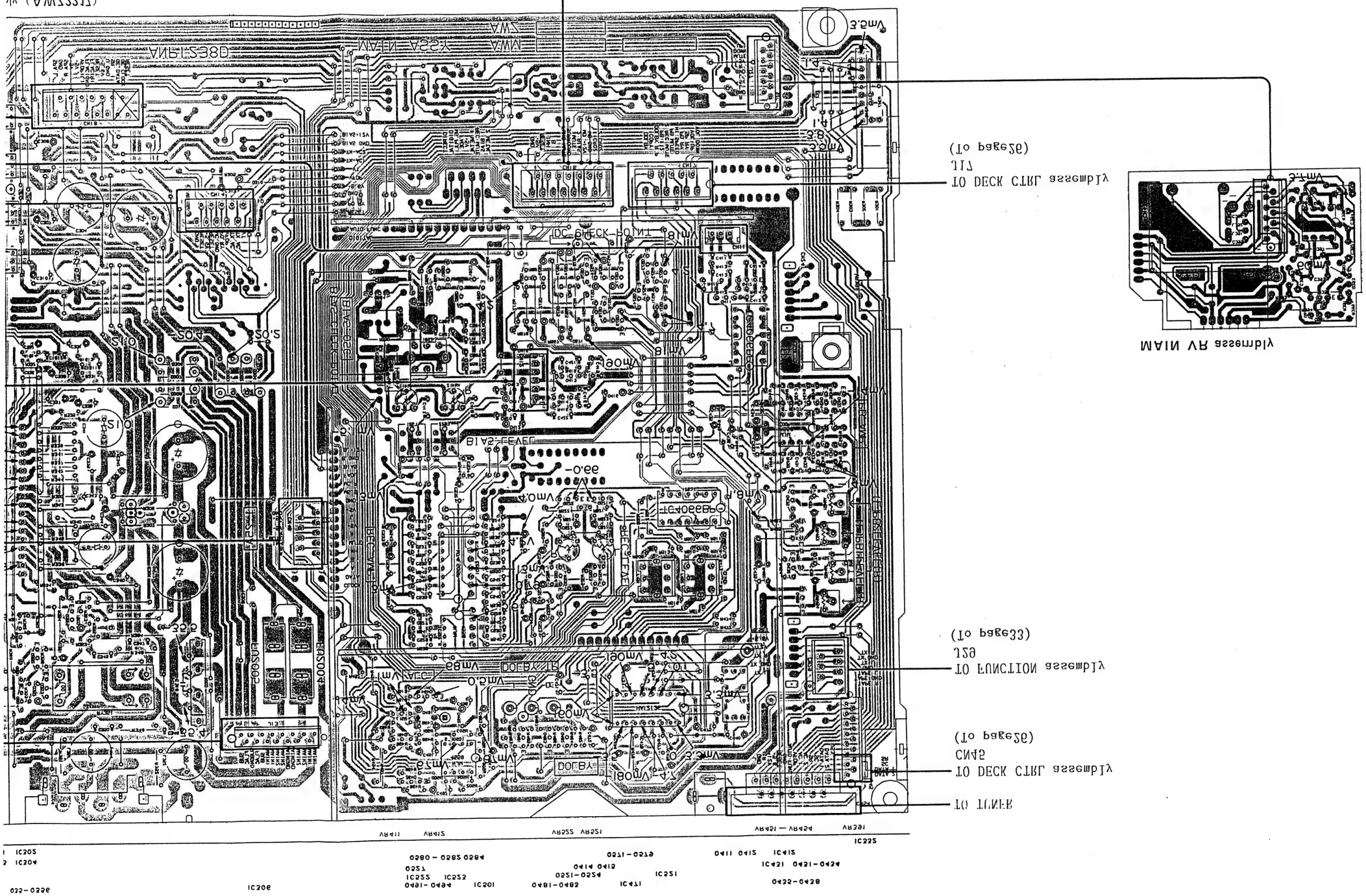
1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504		Transistor
Q215		Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513		Capacitor (Polarity)
C518		Capacitor (Non-polarity)

Others

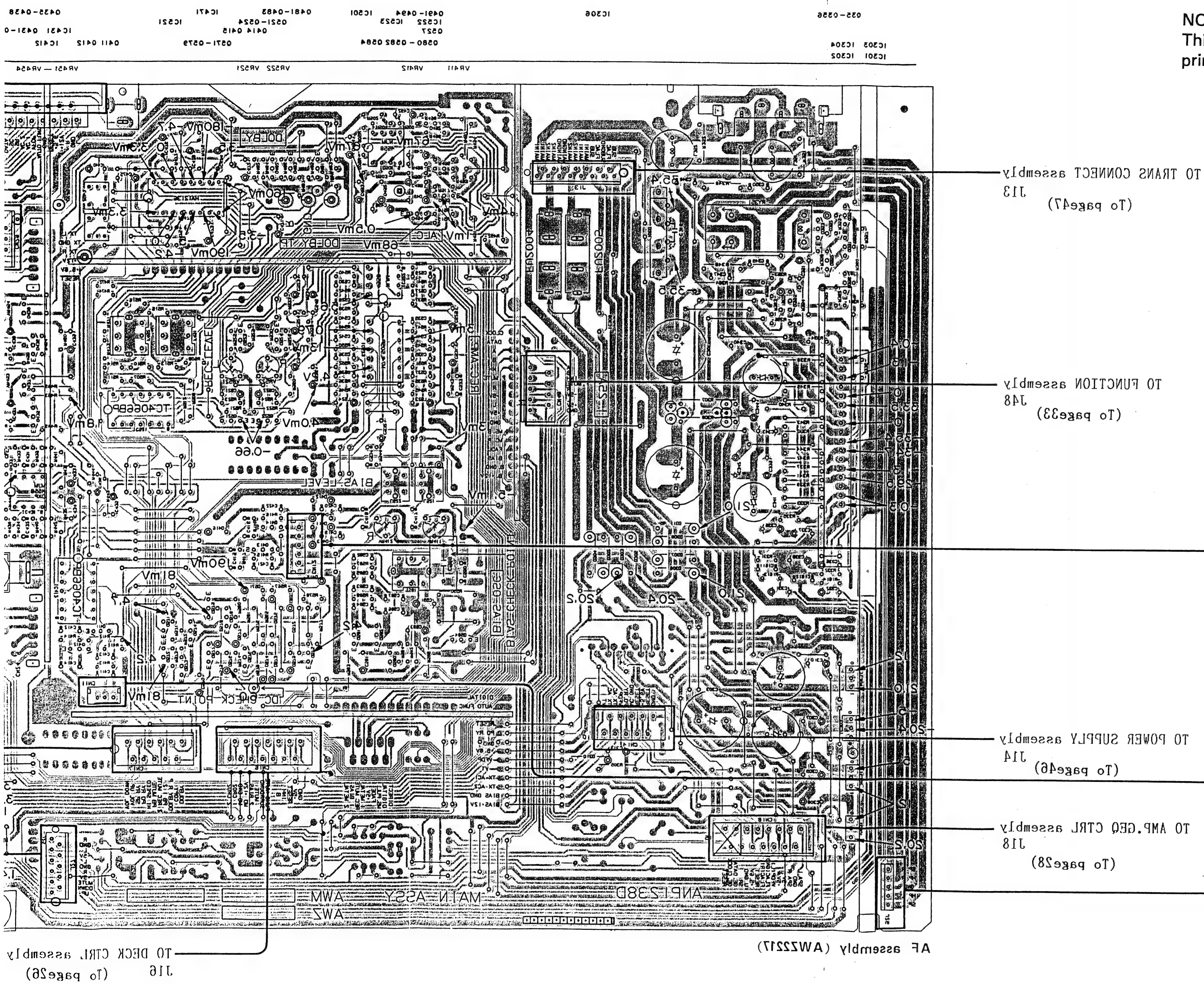
P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

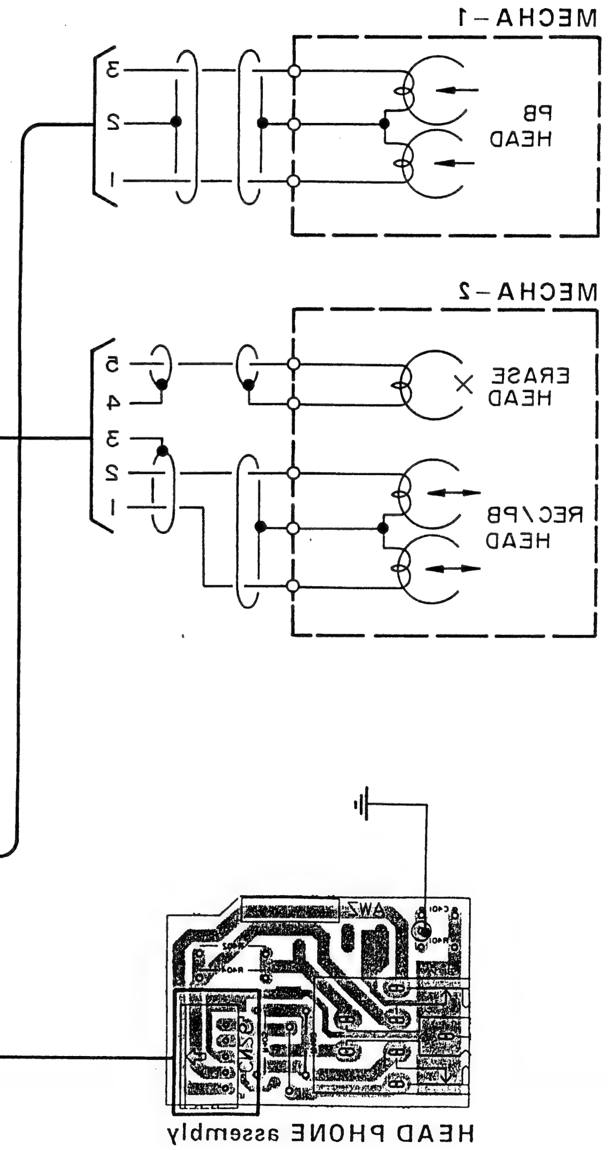
3. The capactor terminal marked with ◎ (double circles) shows negatine termianl.
4. The diode terminal marked with ◎ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.


TO DECK CTRL assembly
J18
(To page58)
MAIN RV assembly
TO DECK CTRL assembly
J17
(To page58)
TO FUNCTION assembly
J25
(To page33)
TO DECK CTRL assembly
CN45
(To page58)
TO TUNER

6 5 4 3 2 1

NOTE:
This picture shows the foil side of the printed circuit.

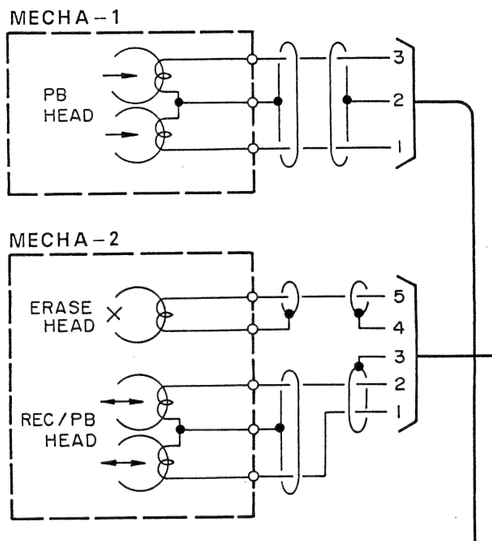


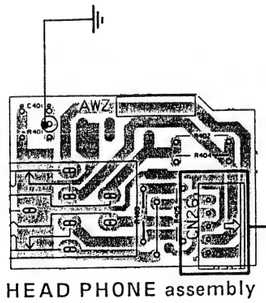


A B C D

6 5 4 3 2 1

4.4 AF(AWZ2217), MAIN VR, HEAD PHONE assembly





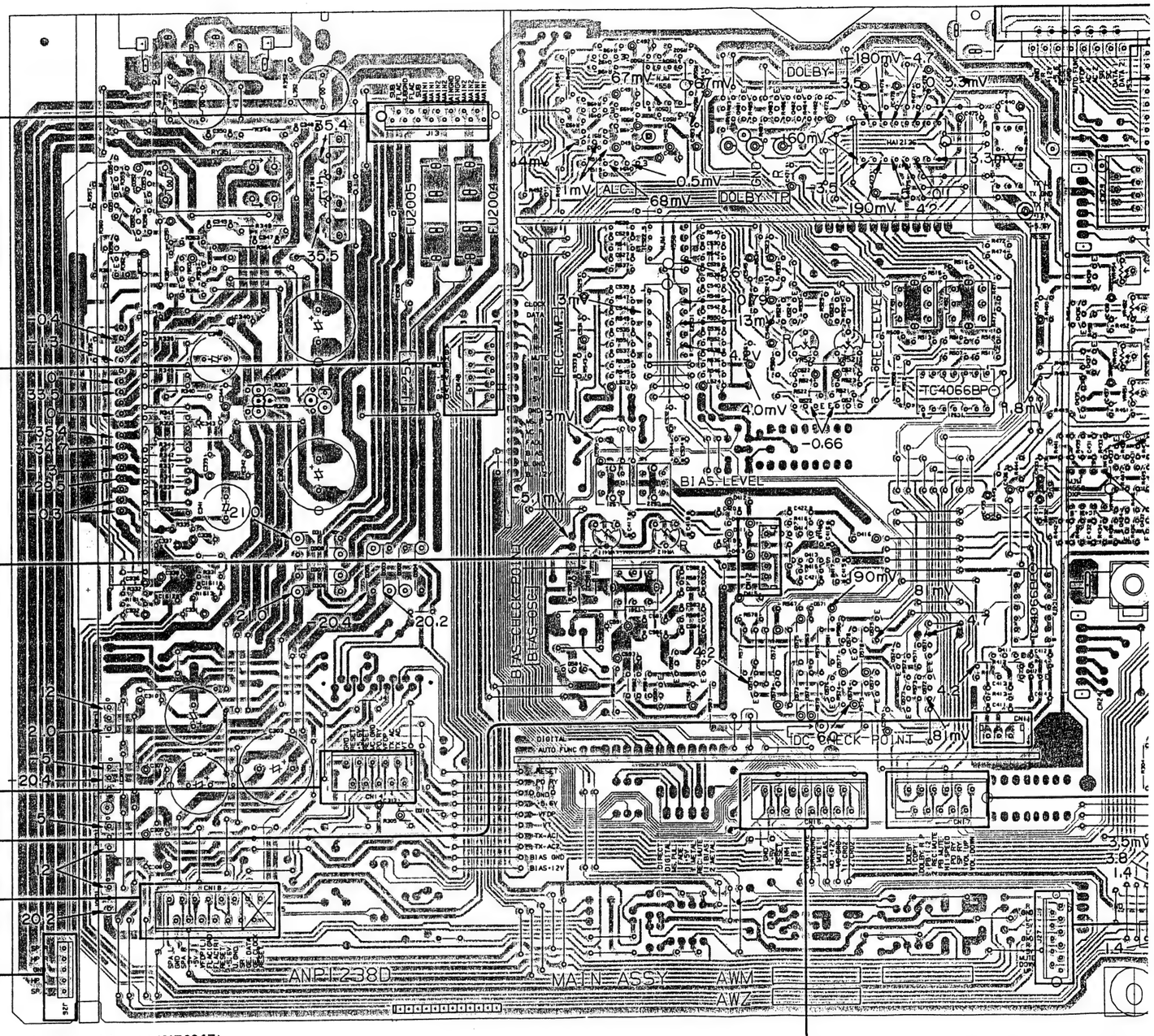
HEAD PHONE assembly

TO TRANS CONNECT assembly J13 (To page47)

TO FUNCTION assembly J48 (To page33)

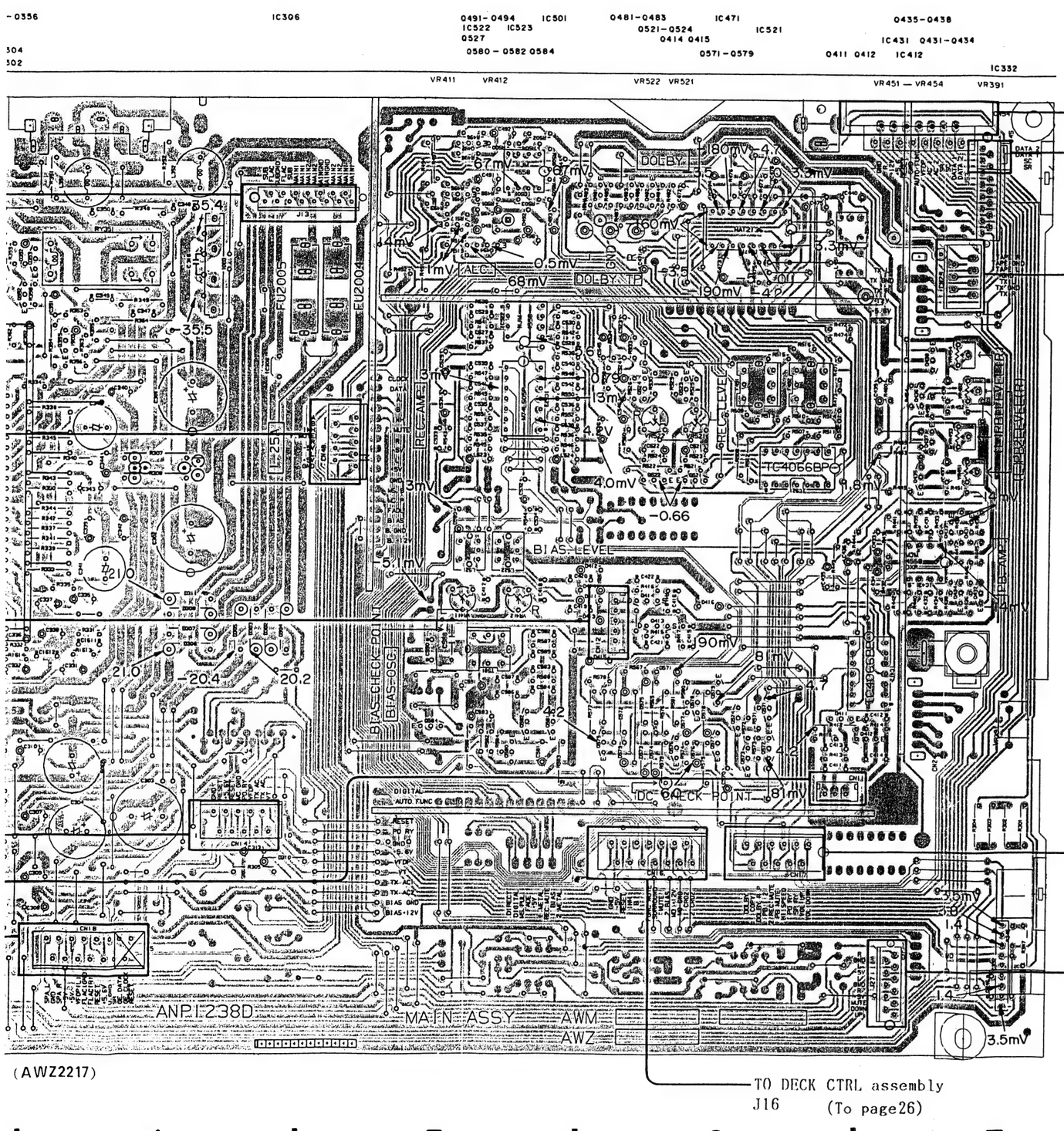
TO POWER SUPPLY assembly J14 (To page46)

TO AMP.GEQ CTRL assembly J18 (To page28)



AF assembly (AWZ2217)

TO DECK CTRL assembly J16 (To page26)



NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504		Transistor
Q215		Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513		Capacitor (Polarity)
C518		Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capactor terminal marked with ⓞ(double circles) shows negatine termianl.
4. The diode terminal marked with ⓞ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

IC371(1/2):AMP IC371(2/2),Q372:BUFFER
Q371:MUTE

To FUNCTION assembly
J48
(To page 32)

To DECK CTRL assembly
CN45
(To page 30)

To TUNER

AF assembly (AWZ2217)

To FUNCTION assembly
J29
(To page 32)

MECHA 1 UNIT

MECHA 2 UNIT

MECHA-2 Lch PLAY

MECHA-1 Lch PLAY

MECHA-2 Rch REC

Q481,Q482:PB MUTE
Q483:BUFFER

Q413,Q414:
REC/PB SWITCHING

Q411,Q412:
PEAKING

IC431,Q431-Q434:PB EQ

Q435,Q436:
PB2 LEVEL ADJ

Q437,Q438:
PB MUTE

IC412:MECHA-1/MECHA-2
PB SELECTOR

Q572,Q573:COPY SWITCHING

Q321:BUFFER

IC501,Q492-Q494:AUTOMATIC LEVEL CONTRO

Q521,Q522:
BUFFER
Q523,Q524:
REC MUTE

IC522:REC AMP
IC523:REC EQ
SWITCHING

Q527,Q528,Q570:
METAL REC AMP SWITCH

Q581,Q582:BIAS OSC

Q585:BEET CUT

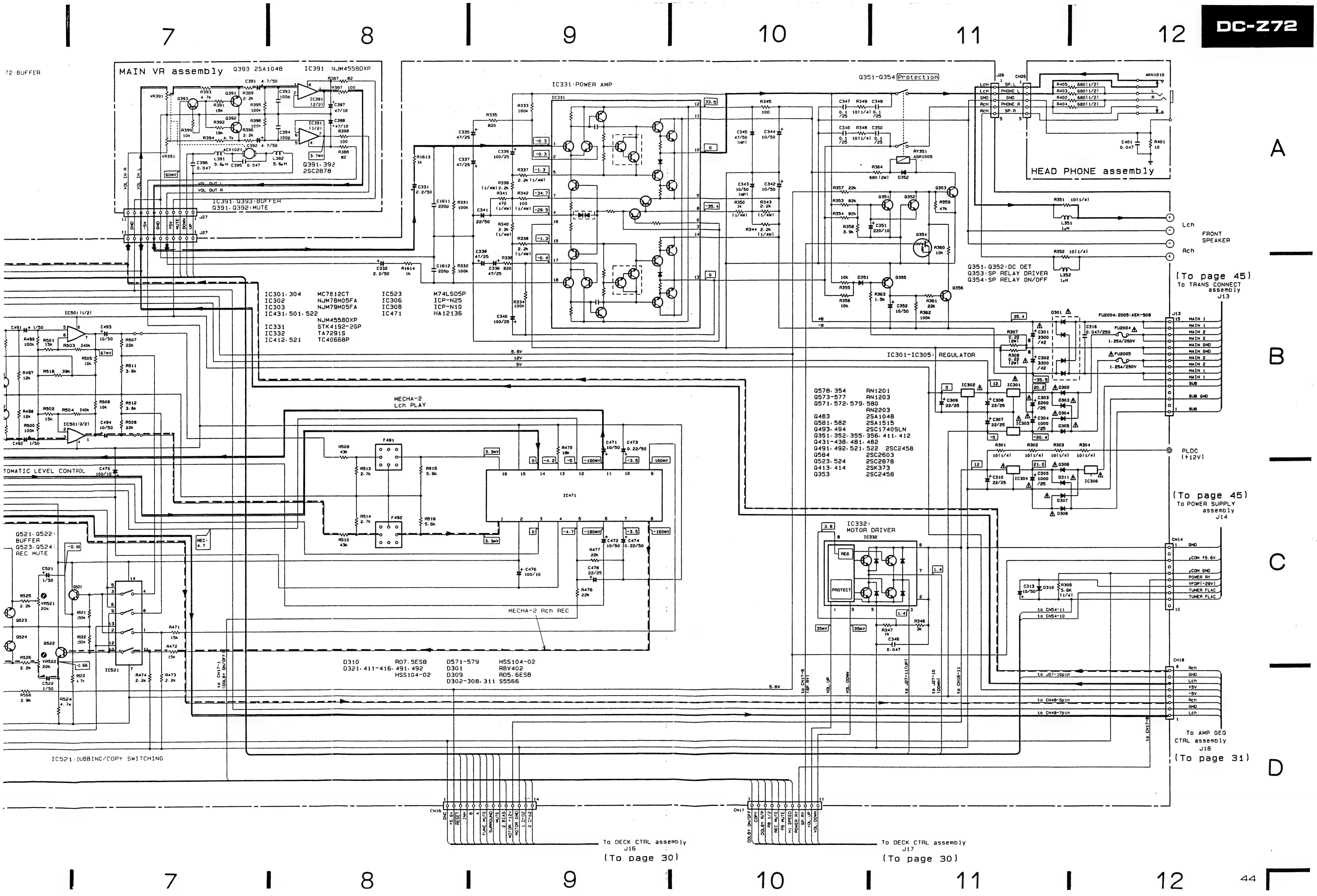
Q583,Q584:BIAS LEVEL
SWITCHING

Q575:X2 SPEED SWITCHING
Q576-Q579:PB1/PB2 SWITCHING

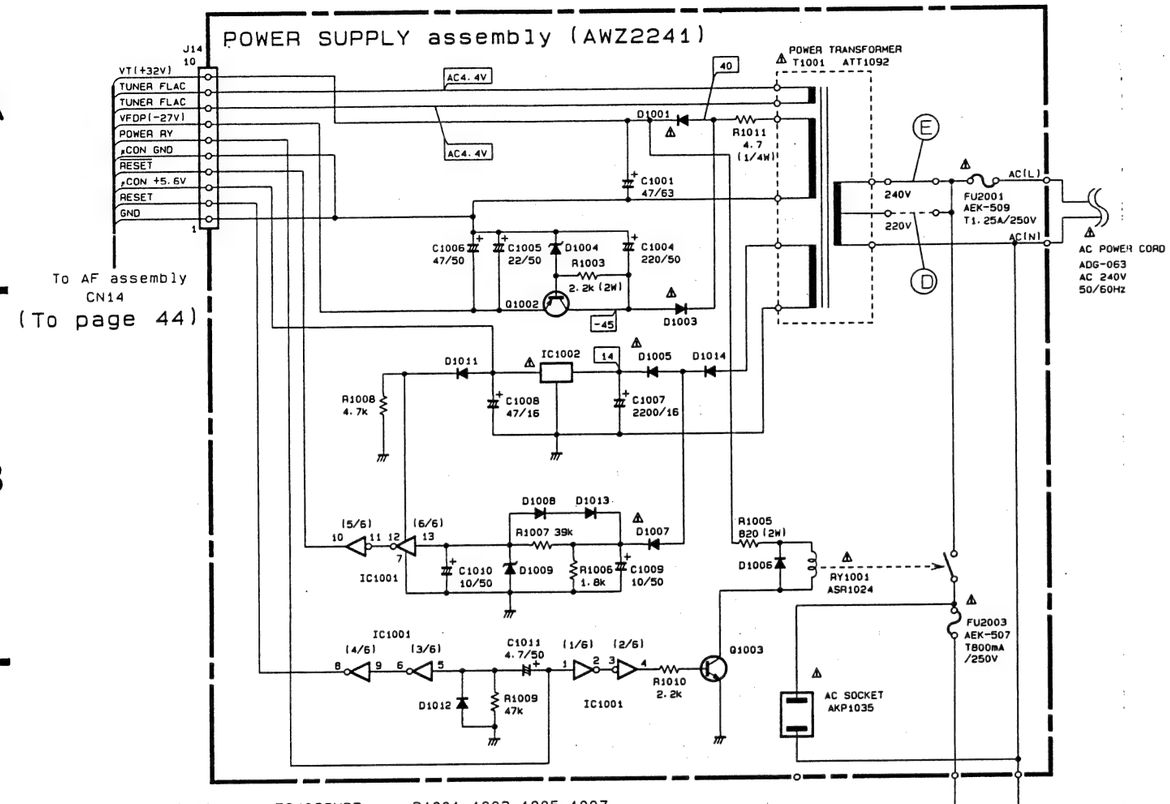
MECHA-2
Lch PLAY

MECHA-2
Rch REC

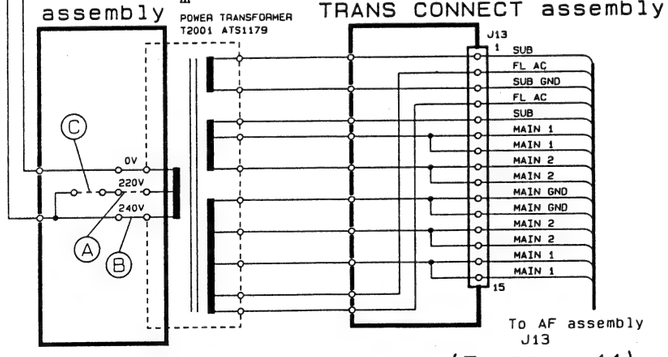
MECHA-1
Lch PLAY

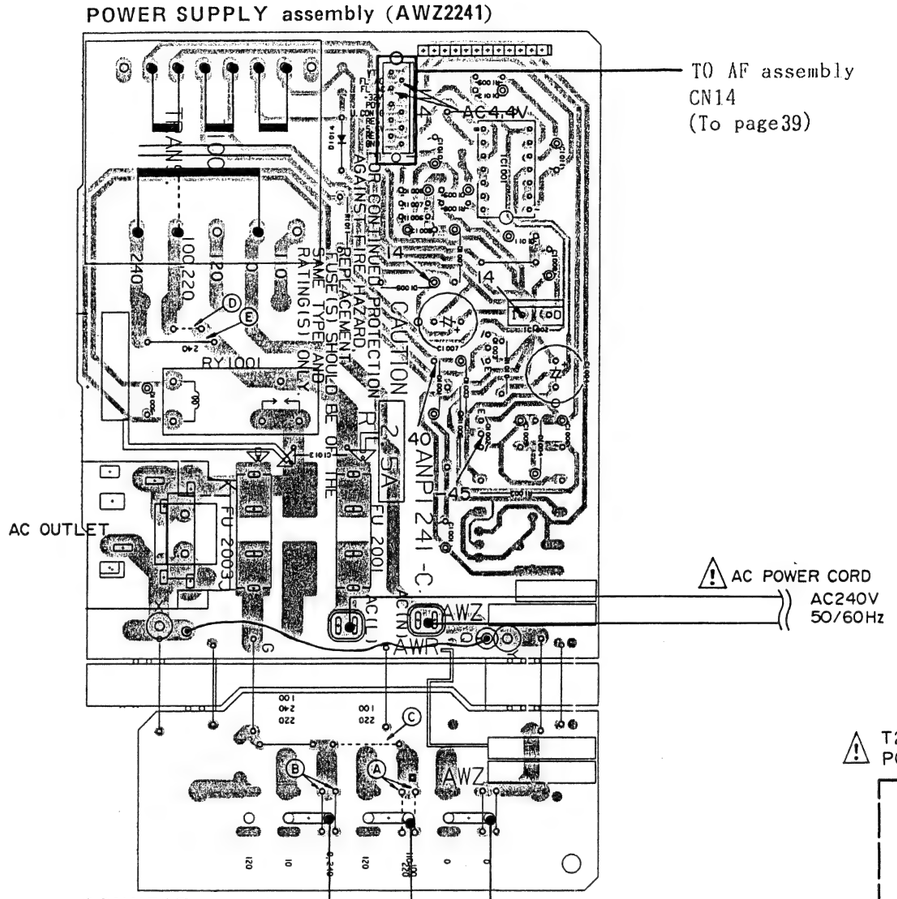

MAIN VR assembly
Q393 2SA1048
IC391 NJM4558DXP
Q391, 392 2SC2878
IC391: Q393: BUFFER
Q391, Q392: MUTE
IC331: POWER AMP
Q351-Q354 Protection
HEAD PHONE assembly
Lch
Rch
FRONT SPEAKER
Q351, Q352: DC DET
Q353: SP RELAY DRIVER
Q354: SP RELAY ON/OFF
(To page 45)
To TRANS CONNECT assembly
J13
IC301, 304 MC7812CT
IC302 NJM78M05FA
IC303 NJM79M05FA
IC431, 501, 522 NJM4558DXP
IC331 STK4192-2GP
IC332 TA7291S
IC412, 521 TC4066BP
IC523 M74LS05P
IC306 ICP-N25
IC308 ICP-N10
IC471 HA12136
IC301-IC305: REGULATOR
MECHA-2 Lch PLAY
MECHA-2 Rch REC
IC471
Q578, 354 RN1201
Q573-577 RN1203
Q571, 572, 579, 580 RN2203
Q483 2SA1048
Q581, 582 2SA1515
Q493, 494 2SC1740SLN
Q351, 352, 355, 356, 411, 412
Q431-438, 481, 482
Q491, 492, 521, 522 2SC2458
Q584 2SC2603
Q523, 524 2SC2878
Q413, 414 2SK373
Q353 2SC2458
PLDC (+12V)
(To page 45)
To POWER SUPPLY assembly
J14
IC332: MOTOR DRIVER
To AMP GEQ CTRL assembly
J18
(To page 31)
Q521, Q522: BUFFER
Q523, Q524: REC MUTE
IC521: DUBBING/COPY SWITCHING
D310 RD7.5ESB
D321, 411-416, 491, 492 HSS104-02
D571-579 HSS104-02
D301 RBV402
D309 RD5.6ESB
D302-308, 311 S5566
To DECK CTRL assembly
J16
(To page 30)
To DECK CTRL assembly
J17
(To page 30)

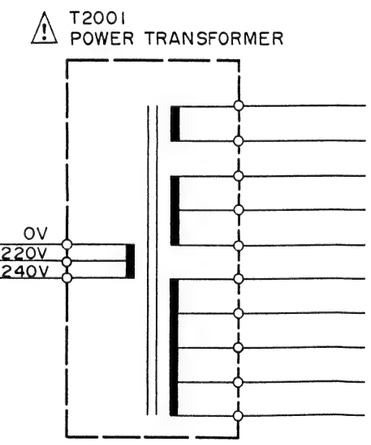
4.5 POWER SUPPLY (AWZ2241) , CONNECT and TRANS CONNECT assembly



IC1001	TC4069UBP	D1001, 1003, 1005, 1007	
IC1002	NJM78M56FA	D1014	S5566
		D1004	RD33ESB2
Q1003	2SC2240	D1006, 1008, 1011-1013	
Q1002	2SB560		HSS104-02
		D1009	RD5.1ESB







Line Voltage Selection(FOR HB AND HE TYPES)

Line voltage can be changed with the following steps.

1. Disconnect the AC power cord.
2. Remove the top cover.
3. Change the position of the jumper wires Ⓐ-Ⓔ as follows.

Voltage / Jumper wire	220V	240V
Ⓐ	○	×
Ⓑ	×	○
Ⓒ	○	×
Ⓓ	○	×
Ⓔ	×	○

○:Be needed
×:Be needless

4. Stick the line voltage label on the rear panel.

Part No.	Description
AAX-193	220V label
AAX-192	240V label

NOTE

1. This P.C.B connection dia
2. The parts which have bx with the corresponding w

P.C.B. pattern diagram indica
Q504 E B C
Q215
D203
R237
C513
C518

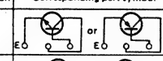
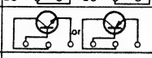
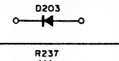
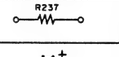
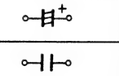
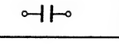
Others

P.C.B. pattern diagram indic
IC
S
RY
L
F
VR

3. The capacitor terminal m
4. The diode terminal mark
5. The transistor terminal t

NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

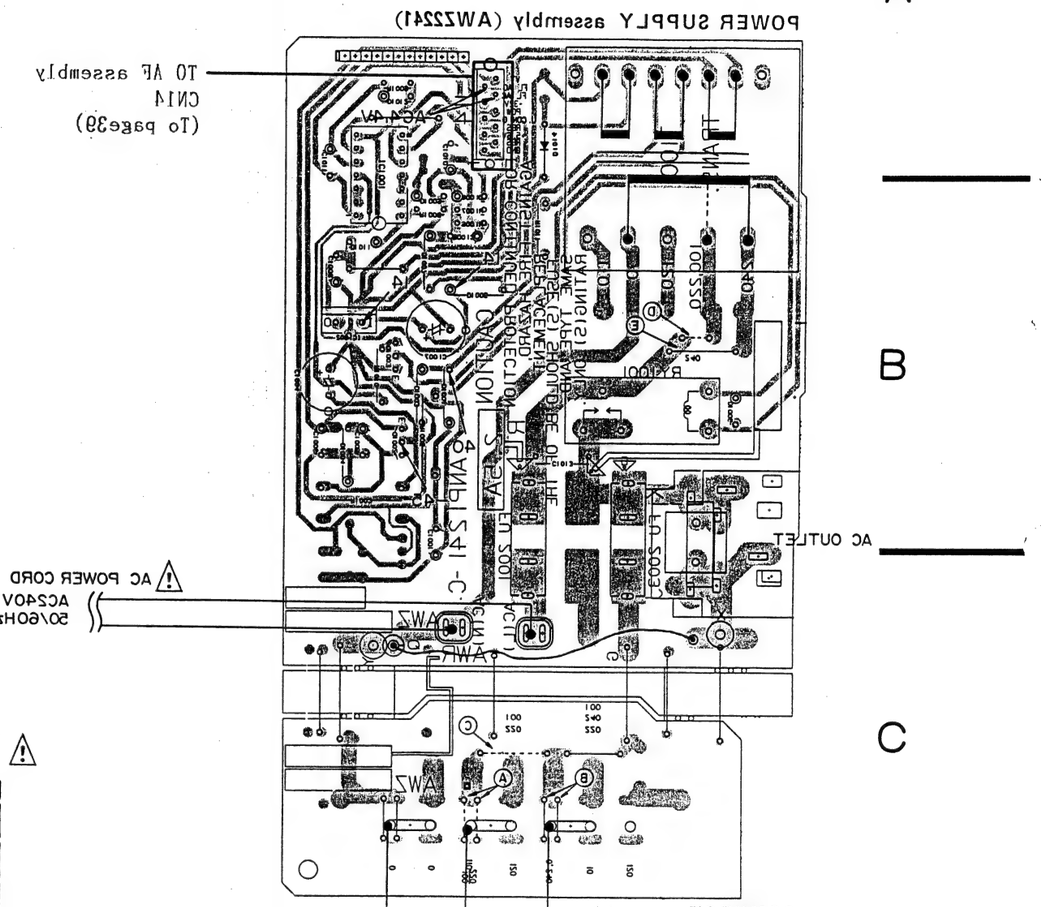
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 E C B		Transistor
Q215		Radiator type transistor
D203		Diode
R237		Resistor
C513		Capacitor (Polarity)
C518		Capacitor (Non-polarity)

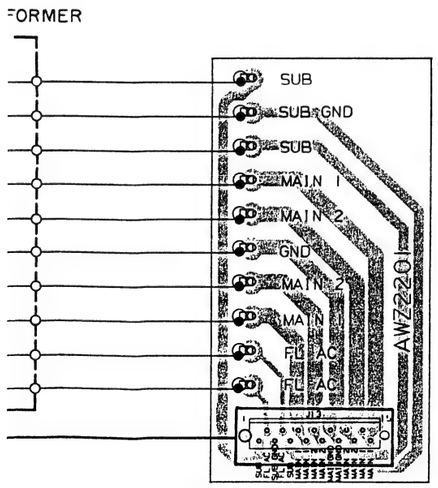
Others

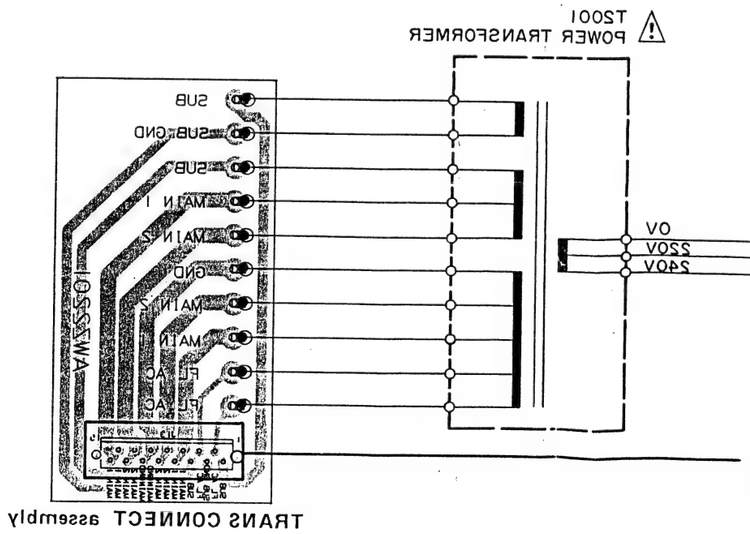
P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with ◎(double circles) shows negative termianl.
4. The diode terminal marked with ◎(double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

NOTE:
This picture shows the foil side of the printed circuit.







5. ELECTRICAL PARTSLIST

NOTES:

- *Parts without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	*56 × 10¹*	*561*	*RD1/4PS 5 6 1 J*
47kΩ	*47 × 10³*	*473*	*RD1/4PS 4 7 3 J*
0.5Ω	*0R5*		*RN2H 0 R 5 K*
1Ω	*010*		*RS1P 0 1 0 K*

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	*562 × 10¹*	*5621*	*RN1/4SR 5 6 2 1 F*

Miscellaneous Parts

P.C.BOARD ASSEMBLIES

Mark	Symbol & Description	Part No.
	Function assembly	
	AF assembly	AWZ2217
	MAIN VR assembly	
	HEAD PHONO assembly	
	TRANS CONNECT assembly	
	AMP, GEQ, CTRL assembly	AWZ2218
	DECK−1 SW assembly	
	DECK−2 SW assembly	
	DECK CTRL assembly	AWZ2219
	POWER SW assembly	
	DECK CENTER assembly	
	POWER SUPPLY assembly	AWZ2241
	CONNECT assembly	

OTHERS

Mark	Symbol & Description	Part No.
⚠	T2001 Power Transformer (AC220V/240V)	ATS1179
⚠	FU2003 Fuse (T800mA/250V)	AEK−507
⚠	FU2001,FU2004,FU2005 Fuse (T1.25A/250V)	AEK−509
⚠	AC Power cord	ADG−063
	Hall IC	AZE1018
	Leaf SW	AZS1054
	Leaf SW	AZS1034
	P.C.BOARD	AZN1835
	Bobbin	AZS1035
	Bobbin	AZS1036
	Motor assembly	AZX1020
	Head frame assembly	AZP1023
	Head frame assembly	AZP1016

FUNCTION assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC903,IC904	NJM4558DXP
	IC901	TC4052BP
	IC902	TC4066BP
	Q901	DTA143ES
	Q902	DTC143ES

CAPACITORS

Mark	Symbol & Description	Part No.
	C903−C906,C929,C930	CCCSL101J50
	C907,C908	CEAS2R2M50
	C909,C910	CKCYB152K50
	C911,C912	CKCYB562K50
	C913,C914	CEAS470M10
	C919,C920	CEAS100M25

RESISTORS

Mark	Symbol & Description	Part No.
	All resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	Terminal 4P (VIDEO, PHONO)	AKB1085
	Terminal 2P (CD)	AKB1086

AF assembly (AWZ2217)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC471	HA12136
	IC306	ICP−N38
	IC301,IC304	MC7812CT
	IC523	M74LS05P
	IC431,IC501,IC522	NJM4558DXP

Mark	Symbol & Description	Part No.
	IC302	NJM78M05FA
	IC303	NJM79M05FA
	IC331	STK4142−2GP
	IC332	TA7291S
	IC412,IC521	TC4066BP
	Q578	RN1201
	Q354,Q573−Q577	RN1203
	Q571,Q572,Q579	RN2203
	Q355,Q483,Q580	2SA1048
	Q581,Q582	2SA1515
	Q493,Q494	2SC1740SLN
	Q351−Q353,Q356,Q411,Q412, Q431−Q438,Q481,Q482,Q491, Q492,Q521,Q522	2SC2458
	Q584	2SC2603
	Q523,Q524	2SC2878
	Q413,Q414	2SK373
	D351,D352,D411−D416,D491, D492,D571−D580	HSS−104−02
	D301	RBV402
	D310 Zener Diode	RD7.5ESB
	D302−D308,D311	S5566

RELAY

Mark	Symbol & Description	Part No.
	RY351	ASR1005

COILS & TRANSFOTMERS

Mark	Symbol & Description	Part No.
	F491,F492 Dolby filter	ATF1064
	L351,L352 AF choke coil	ATH−133
	L521,L522 Trap coil	ATM−037
	L451,L452 Trap coil	ATM1001
	T581 Bias oscillator transformer	ATX−043
	L523,L524 Inductor	LTA392J

CAPACITORS

Mark	Symbol & Description	Part No.
	C588 (2000P/630)	ACE1020
	C301,C302 (2200/42)	ACH1109
	C417,C418	CCCSL101K500
	C1611,C1612	CCCSL221J50
	C419,C420	CCCSL560K500
	C421,C422	CCMSL100D50
	C343	CEANP100M50
	C341	CEANP220M50
	C345	CEANP470M50
	C473,C474	CEASR22M50
	C495	CEASR33M50
	C437−C440,C491,C492, C521−C524	CEAS010M50
	C313,C342,C344,C352,C471, C472,C493,C494,C496,C570	CEAS100M50
	C475,C476	CEAS101M10
	C593	CEAS101M16
	C339,C340	CEAS101M25
	C304,C305	CEAS102M25
	C331,C332,C531,C532	CEAS2R2M50
	C307−C310,C478	CEAS220M25
	C351	CESA221M10
	C303	CEAS222M25
	C433,C434,C525,C526	CEAS330M16
	C591	CEAS4R7M50
	C435,C436	CEAS470M10
	C545,C546,C581	CEAS470M16
	C335,C337,C338	CEAS470M25
	C336	CEHAQ470M25
	C541,C542	CFTXA333J50
	C527,C528	CFTXA683J50
	C347−C350	CKCYX104M25
	C316	CKDYB392K500
	C346	CKDYF473Z50
	C587	CKMYB221K50
	C411,C412	CKMYB331K50
	C413,C414	CKMYB471K50
	C533,C534,C586	CKMYB681K50
	C415,C416	CKMYB821K50
	C582,C584	CQMA103K50
	C585	CQMA123K250
	C583	CQMA153K50
	C529,C530	CQMA182J50
	C535,C536	CQMA183J50
	C539,C540	CQMA562J50
	C590	CQMA562K400
	C431,C432	CQMA682J50
	C537,C538	CQMA752J50

RESISTORS

Mark	Symbol & Description	Part No.
	R307,R308	RS2LMFR22J
	R364	RS2LMF681J
	VR451,VR452 (100k)	VRTM6H104
	VR453,VR454 (20k)	VRTM6H203
	VR521,VR522 (20k)	VRTM6V203

Mark	Symbol & Description	Part No.
	VR411,VR412 (200k)	VRTM6V204
	R590	RD1/2PM180J
	R341,R342,R345,R350－R352	RD1/4PMFL□□□J
	R301－R305,R337－R340,R343, R344,R348,R349	RD1/4PM□□□J
	Other resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	4P Speaker terminal	AKE1012
	DC jack	AKN－203

MAIN VR assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC391	NJM4558DXP
	Q393	2SA1048
	Q391,Q392	2SC2878

COILS

Mark	Symbol & Description	Part No.
	L391,L392 Axial Inductor (5.6μH)	LAU5R6K

CAPACITORS

Mark	Symbol & Description	Part No.
	C393,C394	CCMSL101J50
	C391,C392	CEAS4R7M50
	C397,C398	CEAS470M10
	C395,C396	CKCYF473Z50

RESISTORS

Mark	Symbol & Description	Part No.
	VR391 (100k × 2)	ACX1021
	Other resistors	RD1/8PM□□□J

HEAD PHONE assembly

CAPACITORS

Mark	Symbol & Description	Part No.
	C401	CKCYF473Z50

RESISTORS

Mark	Symbol & Description	Part No.
	R402－R405	RD1/2PMF681J
	R401	RD1/8PM100J

OTHERS

Mark	Symbol & Description	Part No.
	Head phone Jack	AKN1010

TRANS CONNECT assembly

No parts are supplied with the TRANS CONNECT assembly.

AMP,GEQ CTRL assembly (AWZ2218)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC701	M74LS05P
	IC702	TC4081BP
	IC721,IC722	BA3812L
	Q701,Q702	DTA143ES
	D701－D705 LED	AEL1065
	D707,D708	HSS104－02

SWITCHES

Mark	Symbol & Description	Part No.
	S701－S705	ASG1029

CAPACITORS

Mark	Symbol & Description	Part No.
	C743,C744	CCMSL101J50
	C727,C728	CEASR15M50
	C723,C724	CEASR68M50
	C741,C742,C747,C748	CEAS100M25
	C749,C750	CEAS470M16
	C733,C734	CKDYB182K50
	C729,C730	CKDYB392K50
	C739,C740	CKDYB682K50
	C735,C736	CKDYX153M25
	C725,C726	CKDYX183M25
	C721,C722	CKDYX393M25
	C731,C732	CKDYX683M25
	C745,C746	CKMYB331K50
	C737,C738	CKMYB391K50

RESISTORS

Mark	Symbol & Description	Part No.
	VR721－VR725 (30k-B5×2)	ACU1031
	Other resistors	RD1/8PM□□□J

DECK－1 SW assembly

SWITCHES

Mark	Symbol & Description	Part No.
	S811－S815 Tact switch (1FWD, 1REV, 1FF, 1REW, 1STOP)	ASG1029

DECK－2 SW assembly

SWITCHES

Mark	Symbol & Description	Part No.
	S821－S825 Tact switch (2FWD, 2REV, 2FF, 2REW, 2STOP)	ASG1029

DECK CTRL assembly (AWZ2219)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC802	M74LS42P
	IC801	PDE029－C
	Q814	DTC143ES
	Q803－806	RN1201
	Q801,802	RN2204
	Q807－812	2SA1515
	D801,D802,D808,D810－D815, D820－D824,D826,D834－D836	HSS104－02

COILS

Mark	Symbol & Description	Part No.
	X801 Ceramic resonator	ASS1018
	L801 Axial Inductor (22μH)	LAU220K

CAPACITORS

Mark	Symbol & Description	Part No.
	C801	CEASR33M50
	C803	CEAS101M10
	C802	CEAS101M16
	C839,C840	CKCYB102K50
	C804－C807	CKCYF473Z50

RESISTORS

Mark	Symbol & Description	Part No.
	VR803 (10k)	VRTM6H103
	VR801,VR802 (20k)	VRTM6H203
	Other resistors	RD1/8PM□□□J

POWER SW assembly

SWITCH

Mark	Symbol & Description	Part No.
	S707	ASG1029

DECK CENTER assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	D845,D846LED	AEL1065
	D841－D844LED	AEK1076
	D847－D850	HSS104－02

SWITCHES

Mark	Symbol & Description	Part No.
	S841－S846 Tact switch	ASG1029
	S847,S848 Slide swithe	ASH1014

RESISTORS

Mark	Symbol & Description	Part No.
	All resistors	RD1/8PM□□□J

POWER SUPPLY assembly (AWZ2241)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC1002	NJM78M56FA
	IC1001	TC4069UBP
	Q1002	2SB560
	Q1003	2SC2240
	D1006,D1008,D1011－D1013	HSS104－02
	D1004 Zener Diode	RD33ESB2
	D1009 Zener Diode	RD5.1ESB
	D1001,D1003,D1005,D1007, D1014	S5566

TRANSFORMER

Mark	Symbol & Description	Part No.
⚠	T1001 Power transformer	ATT1092

RELAY

Mark	Symbol & Description	Part No.
⚠	RY1001 Relay	ASR1024

CAPACITORS

Mark	Symbol & Description	Part No.
	C1009,C1010	CEAS100M50
	C1005	CEHAQ220M50
	C1004	CEAS221M50
	C1007	CEAS222M16
	C1011	CEAS4R7M50
	C1008	CEAS470M16
	C1006	CEAS470M50
	C1001	CEAS470M63

RESISTORS

Mark	Symbol & Description	Part No.
	R1011	RD1/4PMFL4R7J
	R1003	RS2LMF222J
	R1005	RS2LMF821J
	Other resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
⚠	1P AC SOCKET (OUTLET)	AKP1035

CONNECT assembly

No parts are supplied with the connection assembly.

6. ADJUSTMENTS

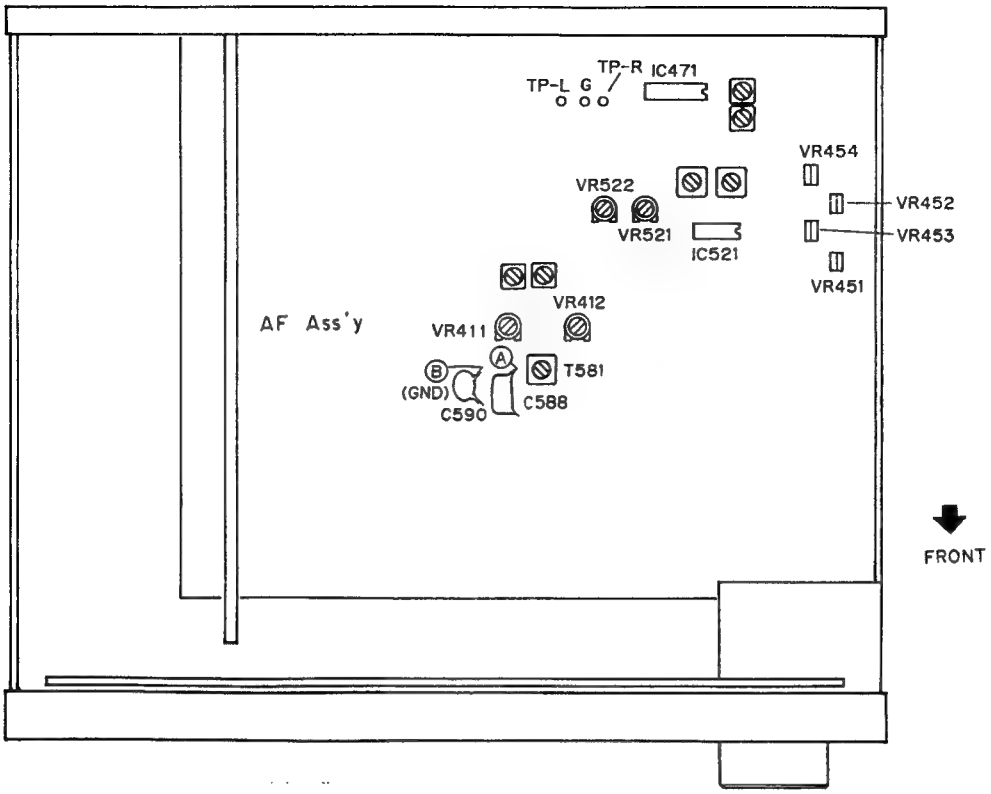


Fig 6.1. Adjustment location

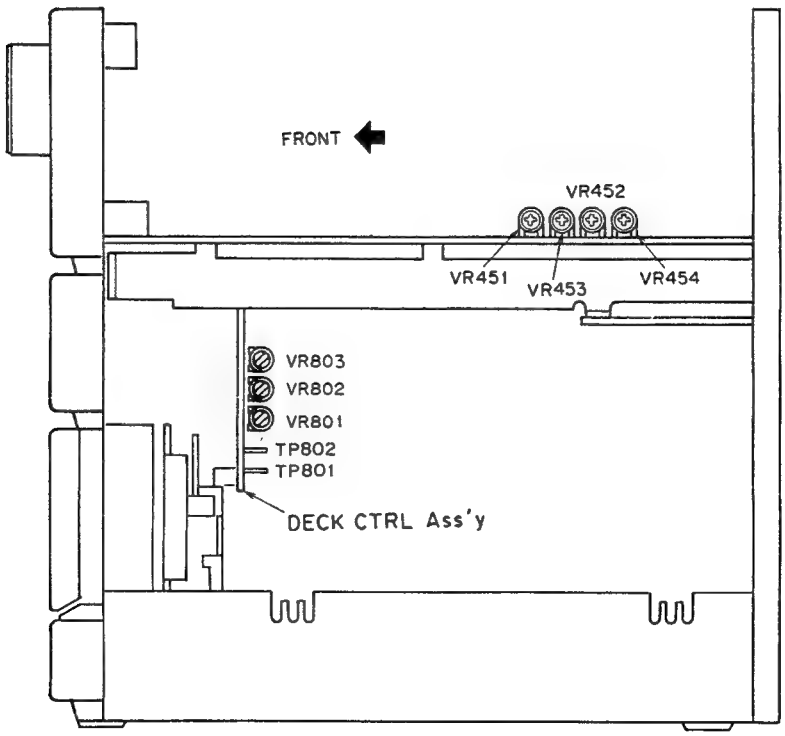


Fig 6.2. Adjustment location

- Adjustment and measurement are usually made in the AF Ass'y, unless specified otherwise.
- Set the graphic equalizer to FLAT. Depending on the country of destination, the unit may be equipped with a MIC mixing volume control.
  If a MIC mixing volume control is built in, please set to the MIN position.
- The function should always be set to "TAPE" unless otherwise specified.

Adjustment of Mechanical System

- Test tape: STD-301 (3 kHz, 30 min.)
- Setting of double speed mode: Short-circuit TP801 and TP802 of the Control Ass'y. To release the mode, break the short circuit.

1. Adjustment of tape speed

No.	Mode	Input signal & Test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1	PLAY	Playback the STD-301 tape to 3 kHz.	Deck I	DECK CTRL Ass'y VR801	TP-L (Lch)	Press the PLAY SW and adjust the frequency to 3010 Hz ±10 Hz. Make sure that the wow and flutter is within 0.2 %.	
2	PLAY (Double speed mode)			—		Press the PLAY SW in double speed mode and confirm that the frequency is 6000 Hz ±1000 Hz. Note down the figure.	Release the double speed mode after adjustment.
3	PLAY (Double speed mode)		Deck II	DECK CTRL Ass'y VR803	TP-R (Rch)	Press the PLAY SW in double speed mode and adjust the frequency to be within ±30 Hz of the figure recorded at step No. 2.	Release the double speed mode after adjustment.
4	PLAY			DECK CTRL Ass'y VR802		Press the PLAY SW and adjust the frequency to 3010 Hz ±10 Hz. Make sure that the wow and flutter is within 0.2 %.	

Adjustment of Electric System

■ Check and conduct the following before adjusting the electric system.

1. Adjustment of tape speed has been completed.
2. Clean and demagnetize the head using a head eraser.
3. When measured, the level should be 0 dBV = 1 Vrms.
4. Use side A of the specified tape for adjustment.
   STD-331B: For adjustment of playback system.
   STD-630: NORMAL blank tape
   STD-620: CrO_2 blank tape
   STD-610: METAL blank tape
5. Prepare the following measuring devices:
   AC millivoltmeter, Low-frequency oscillator, Attenuator, Oscilloscope
6. Adjust both L and R channels, unless specified otherwise.
7. Set the DOLBY NR switches to OFF, unless specified otherwise.
8. Warm up the unit for several minutes before adjustment. Especially before adjusting the frequency characteristics of recording and playback, warm up for 3 to 5 minutes in REC/PLAY mode.
9. Make sure to follow the proper order of the adjustment procedure. Any change in the order may cause an imperfect result.

List of Adjustment

Deck I

1. Head azimuth adjustment
2. Playback level adjustment

Deck II

1. Head azinuth adjustment
2. Playback level adjustment
3. Adjustment frequency characteristics of recording/playback
4. Recording level adjustment

Checking of Decks II

1. Make sure the ALC is operating properly.

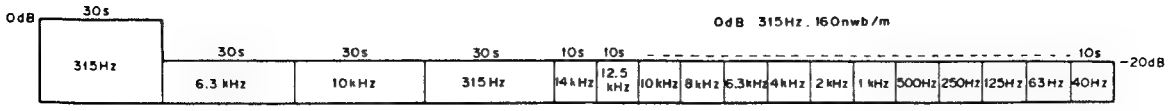


Fig. 6.3 Test tape STD-331B

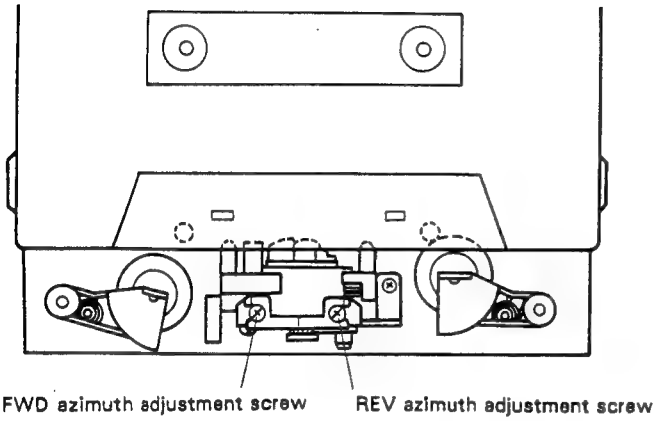


Fig. 6.4 Head azimuth adjustment

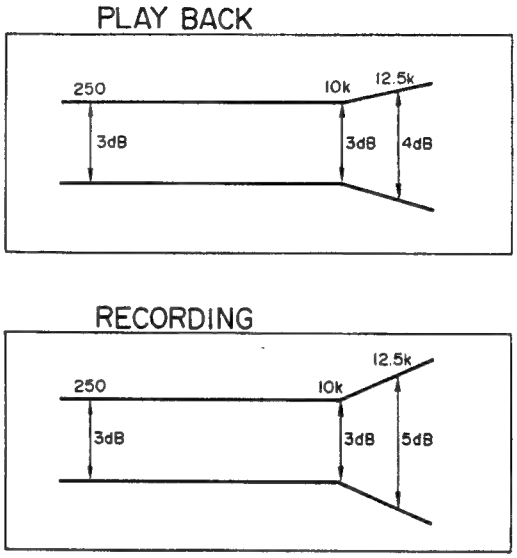


Fig. 6.5 Frequency characteristics

• Head Adjustment of Deck I

- Deck I is provided with an automatic tape selector mechanism.
- Note: Do not switch over FWD and REV while the driver is inserted.

1. Head Azimuth Adjustment

Procedure	Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	PLAY	Playback the test tape STD-331B (10 kHz, -20 dB).	Head azimuth adjustment screw (Fig. 6-4)	TP-L (Lch) TP-R (Rch)	Maximum playback signal level	Lock the screw with screw lock after completing adjustment.

2. Playback Level Adjustment

- Be sure to make a careful adjustment, as the adjustment determines the DOLBY NR level for playback.

Procedure	Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	PLAY	Playback the test tape STD-331B (315 Hz, 0 dB).	VR453 (Lch) VR454 (Rch)	TP-L (Lch) TP-R (Rch)	−6.7 dBV	

• Head Adjustment of Deck II

- Deck II is provided with an automatic tape selector mechanism.
- Note: Do not switch over FWD and REV while the driver is inserted.

1. Head Azimuth Adjustment

Procedure	Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	PLAY	Playback the test tape STD-331B (10 kHz, -20 dB).	Head azimuth adjustment screw (Fig. 6-4)	TP-L (Lch) TP-R (Rch)	Maximum playback signal level	Lock the screw with screw lock after completing adjustment.

2. Playback Level Adjustment

- Be sure to make a careful adjustment, as the adjustment determines the DOLBY NR level for playback.

Procedure	Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	PLAY	Playback the test tape STD-331B (315 Hz, 0 dB).	VR451 (Lch) VR452 (Rch)	TP-L (Lch) TP-R (Rch)	−6.7 dBV	

3. Adjustment of frequency characteristics of recording/playback

- As this procedure is for adjustment of the recording bias, be careful not to increase the distortion rate by under-adjusting the bias.

Procedure	Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	REC	Load the test tape STD-630 and set to record mode.	——	Area between Ⓐ and Ⓑ (A F Ass'y) shown in Fig. 6-1.	Confirm that the oscillation frequency is 105 kHz ±1 kHz.	If the adjustment value cannot be set within the sepcification, adjust the T581.
2	NORM	REC	Apply a signal of 315 Hz to the CD input terminal and set the function to "CD".	Input signal level	TP-L (Lch) TP-R (Rch)	−27.7 dBV	
3	NORM	REC/ PLAY	Record and playback the test tape STD-630 (315 Hz and 10 kHz).	VR411 (Lch) VR412 (Rch)	TP-L (Lch) TP-R (Rch)	Repeat the correction so that the playback level of 10 kHz remains 0 ±0.5 dB in relation to 315 Hz.	

4. Recording Level Adjustment

Procedure	Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	REC	Apply a signal of 315 Hz to the CD input terminal and set the function to "CD".	Input signal level	TP-L (Lch) TP-R (Rch)	−7.7 dBV	
2	NORM	REC/ PLAY	Record and playback the test tape STD-630 (315 Hz).	VR521 (Lch) VR522 (Rch)	TP-L (Lch) TP-R (Rch)	Repeat the recording and correction so that the playback level of 315 Hz is −6.7 dBV.	

• Checking Procedure for Deck II

1. Action of ALC

Procedure	Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Cheking value	Remarks
1	NORM	REC	Apply a signal of 315 Hz to the CD input terminal and set the function to "CD".	Input signal level	TP-L (Lch) TP-R (Rch)	−7.7 dBV	
2				+10 dB against the input level of step 1.		−2.7 dBV ±2.5 dB	

6. RÉGLAGES

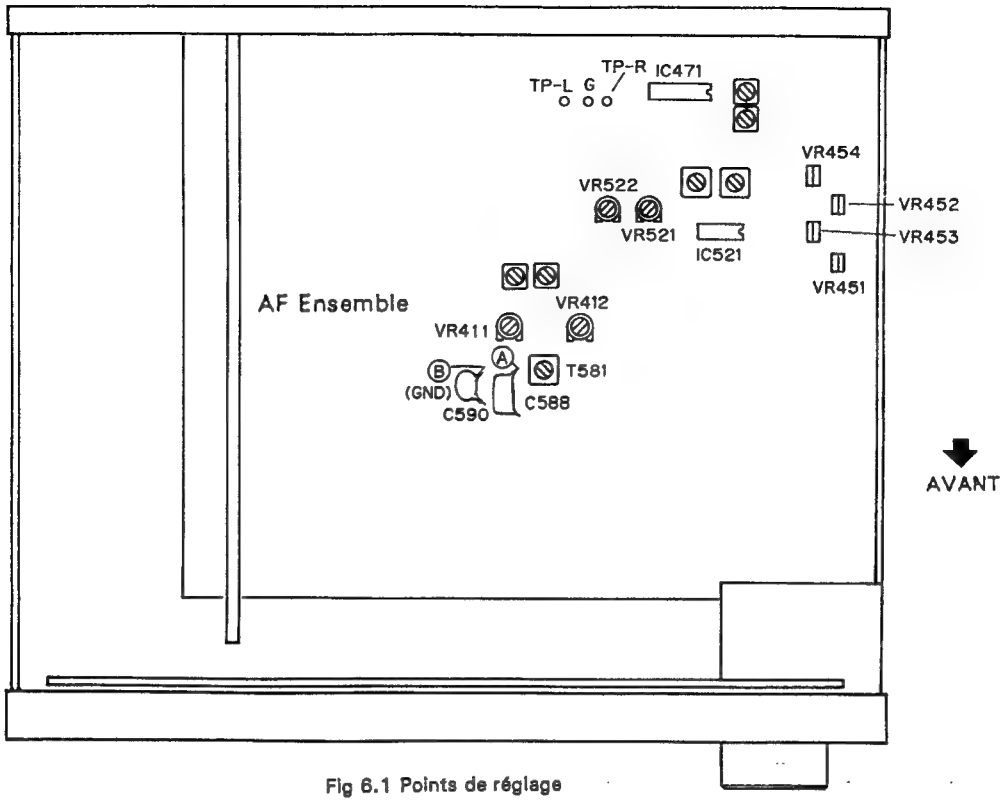


Fig 6.1 Points de réglage

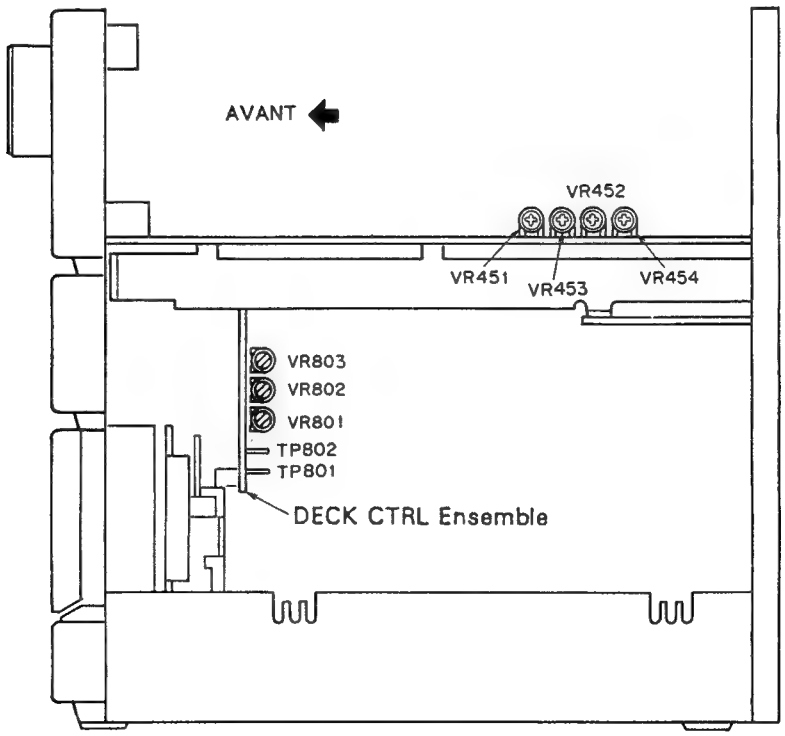


Fig 6.2 Points de réglage

- Les réglages et les mesures sont généralement faits dans l'ensemble AF, à moins de spécification contraire.
- Régler l'égaliseur graphique sur FLAT, selon le pays de destination, l'unité peut être équipée d'une commande de volume de mixage de micro.
  Si une commande de volume de mixage de micro est incorporée, prière de la régler à la position minimum.
- La fonction doit toujours être réglée sur "TAPE" à moins de spécification contraire.

Réglages mécaniques

- Bande d'étalonnage: STD-301 (3 kHz, 30 mn.)
- Réglage du mode de vitesse double: Court-circuiter TP801 et TP802 de l'ensemble de commande. Pour libérer le mode, ouvrir le court-circuit.

1. Réglage de la vitesse de bande

No.	Mode	Signal appiligeé / bande d'étalonnage	Emplacement du réglage		Emplacement du point de mesure	Valeur relevée	Dbservations
1	PLAY	Reproduire la bande STD-301 par 3 kHz.	Platine I	ENSEMBLE COMM. PLATINE VR801	TP-L (can. G)	Appuyer sur le contacteur PLAY et régler la fréquence sur 3.010 Hz ±10 Hz. Vérifier que le pleurage et scintillement est dans la limite de 0,2%.	
2	PLAY (Mode de vitesse double)			—		Appuyer sur le contacteur PLAY dans le mode de vitesse double et vérifier que la fréquence est 6.000 Hz ±1.000 Hz. Noter le chiffre.	Libérer le mode de vitesse double après le réglage.
3	PLAY (Mode de vitesse double)		Platine II	ENSEMBLE COMM. PLATINE VR803	TP-R (can. D)	Appuyer sur le contacteur PLAY dans le mode de vitesse double et régler la fréquence pour qu'elle soit dans la limite de ±30 Hz du chiffre noté dans l'étape No. 2.	Libérer le mode de vitesse double après le réglage.
4	PLAY			ENSEMBLE COMM. PLATINE VR802		Appuyer sur le contacteur PLAY et régler la fréquence sur 3.010 Hz ±10 Hz. Vérifier que le pleurage et scintillement est dans la limite de 0,2%.	

Réglages électriques

■ Vérifier les points suivants et effectuer les opérations suivantes avant procéder aux réglages électriques.

1. Le réglage de la vitesse de bande a été complété.
2. Nettoyer et démagnétiser la tête avec un démagnétiseur de tête.
3. Lors de la mesure, le niveau doit être de 0 dBV = 1 Vepp.
4. Utiliser la face A de la bande spécifiée pour le réglage. STD-331B: Pour le réglage du système de lecture.
   STD-630: Bande vierge NORMAL
   STD-620: Bande vierge CrO_2
   STD-610: Bande vierge METAL
5. Préparer les instruments de mesure suivants:
   Millivoltmètre CA, oscillateur à basse fréquence, éatténnateur et oscilloscope.
6. Régler les deux canaux L (gauche) et R (droit), sauf spécification contraire.
7. Régler les commutateurs DOLBY NR sur la position OFF, sauf spécification contraire.
8. Laisser chauffer l'appareil pendant plusieurs minutes avant le réglage. En particulier avant d'effectuer le réglage de la réponse en fréquence d'enregistrement et de lecture, laisser chauffer l'appareil pendant 3 à 5 minutes dans le mode d'enregistrement/lecture (REC/PLAY).
9. Toujours suivre l'ordre spécifié de la méthde réglage. Tout changement de l'ordre peut provoquer des résultats imparfaits.

Liste des réglages

Platine I

1. Azimut de la tête
2. Niveau de lecture

Platine II

1. Azimut de la tête
2. Niveau de lecture
3. Réponse en fréquence d'enregistrement/lecture
4. Niveau d'enregistrement

Vérification de la Platines II

1. Vérifier que le ALC fonctionne correctement.

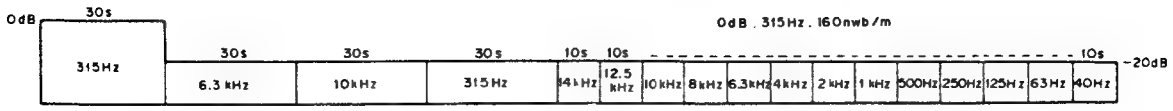


Fig. 6.3 Bande d'étalommge STD-331B

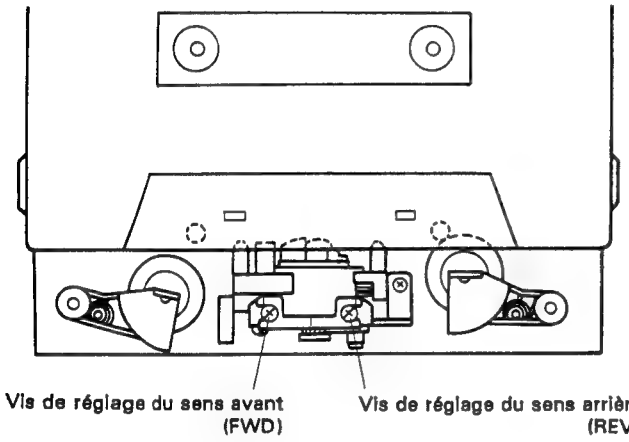


Fig. 6.4 Réglage d'azimut de la tête

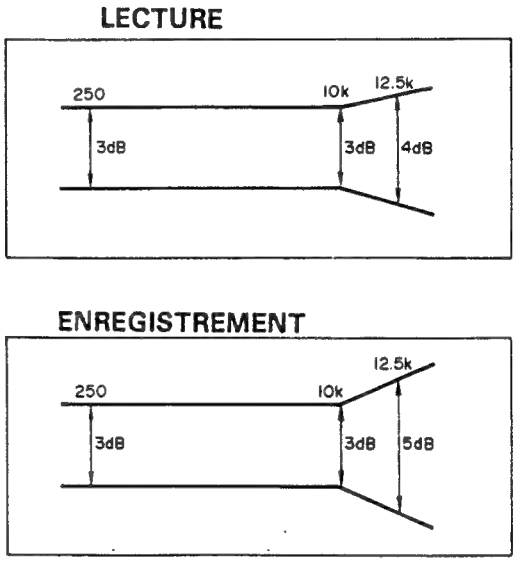


Fig. 6.5 Réponse en fréquence

• Réglage de la Platine I

• La Platine I est équipée d'un mécanisme de sélection automatique de bande.

• Remarque: Ne pas commuter entre le sens avant (FWD) et le sens arrière (REV) pendant que le tournevis est inséré.

1. Réglage d'azimut de la tête

Opération	Sélecteur de bande	Mode	Signal appiligeé / bande d'étalonnage	Emplacement du réglage	Emplacement du point de mesure	Valeur relevée	Obserrations
1	NORM	PLAY	Reproduire la bande d'étalonnage STD-331B (10 kHz, -20 dB).	Vis de réglage d'ézimut de tête (Fig. 6-4)	TP-L (can. G) TP-R (can. D)	Niveau maximum du signal de lecture	Une fois le réglage terminé, bloquer la vis avec un frein de vis.

2. Réglage du niveau de lecture

• Toujours effectuer un réglage minutieux, car la valeur réglée sera le niveau Dolby pour la lecture.

Opération	Sélecteur de bande	Mode	Signal appiligeé /· bande d'étalonnage	Emplacement du réglage	Emplacement du point de mesure	Valeur relevée	Obserrations
1	NORM	PLAY	Reproduire la bande d'éealonnfe STD-331B (315 kHz, 0 dB)	VR453 (can. G) VR454 (can. D)	TP-L (can. G) TP-R (can. D)	−6,7 dBV	

• Réglage de la Platine II

• La Platine II est équipée d'un mécanisme de sélection automatique de bande.

• Remarque: Ne pas commuter entre le sens avant (FWD) et le sens arrière (REV) pendant que le tournevis est inséré.

1. Réglage d'azimut de la tête

Opération	Sélecteur de bande	Mode	Signal appiligeé / bande d'étalonnage	Emplacement du réglage	Emplacement du point de mesure	Valeur relevée	Observations
1	NORM	PLAY	Reproduire la bande d'étalonnage STD-331B (10 kHz, -20 dB).	Vis de réglage d'ézimut de tête (Fig. 6-4)	TP-L (can. G) TP-R (can. D)	Niveau maximum du signal de lecture	Une fois le réglage terminé, bloquer la vis avec un frein de vis.

2. Réglage du niveau de lecture

• Toujours effectuer un réglage minutieux, car la valeur réglée sera le niveau Dolby pour la lecture.

Opération	Sélecteur de bande	Mode	Signal appiligeé / bande d'étalonnage	Emplacement du réglage	Emplacement du point de mesure	Valeur relevée	Observations
1	NORM	PLAY	Reproduire la bande d'éealonnfe STD-331B (315 kHz, 0 dB)	VR451 (can. G) VR452 (can. D)	TP-L (can. G) TP-R (can. D)	−6,7 dBV	

3. Réglage de la réponsen fréquence d'enregistrement/lecture

• Cette opération réglant la polarisation d'enregistrement, faire attention de ne pas augmenter la distorsion par un réglage insuffisant de la polarisation.

Procédure	Sélecteur de bande	Mode	Signal appiligeé / bande d'étalonnage	Emplacement du réglage	Emplacement du point de mesure	Valeur relevée	Observations
1	NORM	REC	Charger la bande d'éealonnage STD-630 et régler dans le mode d'enregistrement.	—	Partie entre Ⓐ et Ⓑ (ensemble d'enregistrement (A.F)) indiquée sur la Fig. 6-1.	Vérifier que la fréquence d'oscillation est de 105 kHz ±1 kHz.	Si la valeur de mesurée ne peut pas être réglée dans les limites spécifiées, régler T581.
2	NORM	REC	Appliquer un signal de 315 Hz à la borne d'entrée CD et régler la fonction sur "CD".	Niveau du signal d'entrée	TP-L (can. G) TP-R (can. D)	−27,7 dBV	
3	NORM	REC / PLAY	Enregistrer et reproduire la bande d'étalonnage STD-630 (315 Hz et 10 kHz).	VR411 (can. G) VR412 (can. D)	TP-L (can. G) TP-R (can. D)	Répéter la correction de sorte que le niveau de lecture de 10 kHz soit de 0 ±0,5 dB en relation avec 315 Hz.	

4. Réglage du niveau d'enregistrement

Procédure	Sélecteur de bande	Mode	Signal d'entrée / bande d'essai	Emplacement du réglage	Emplacement du point de mesure	Valeur relevée	Remarques
1	NORM	REC	Appliquer un signal de 315 Hz à la borne d'entrée CD et régler la fonction sur "CD".	Niveau du signal d'entrée	TP-L (can. G) TP-R (can. D)	−7,7 dBV	
2	NORM	REC / PLAY	Enregistrer et reproduire la bande d'essai STD-630 (315 Hz).	VR521 (can. G) VR522 (can. D)	TP-L (can. G) TP-R (can. D)	Répéter l'enregistrement et la correction de sorte que le niveau de lecture de 315 Hz soit de −6,7 dBV.	

• Vérification de la Platine II

1. Action du ALC

Opération	Sélecteur de bande	Mode	Signal appiligeé / bande d'étalonnage	Emplacement du réglage	Emplacement du point de mesure	Valeur relevée	Observations
1	NORM	REC	Appliquer un signal de 315 Hz à la borne d'entrée CD et régler la fonction sur "CD".	Niveau du signal d'entrée	TP-L (can. G) TP-R (can. D)	−7,7 dBV	
2				+10 dB par rapport au niveau d'entrée de l'étape 1.		−2,7 dBV ±2,5 dB	

6. AJUSTE

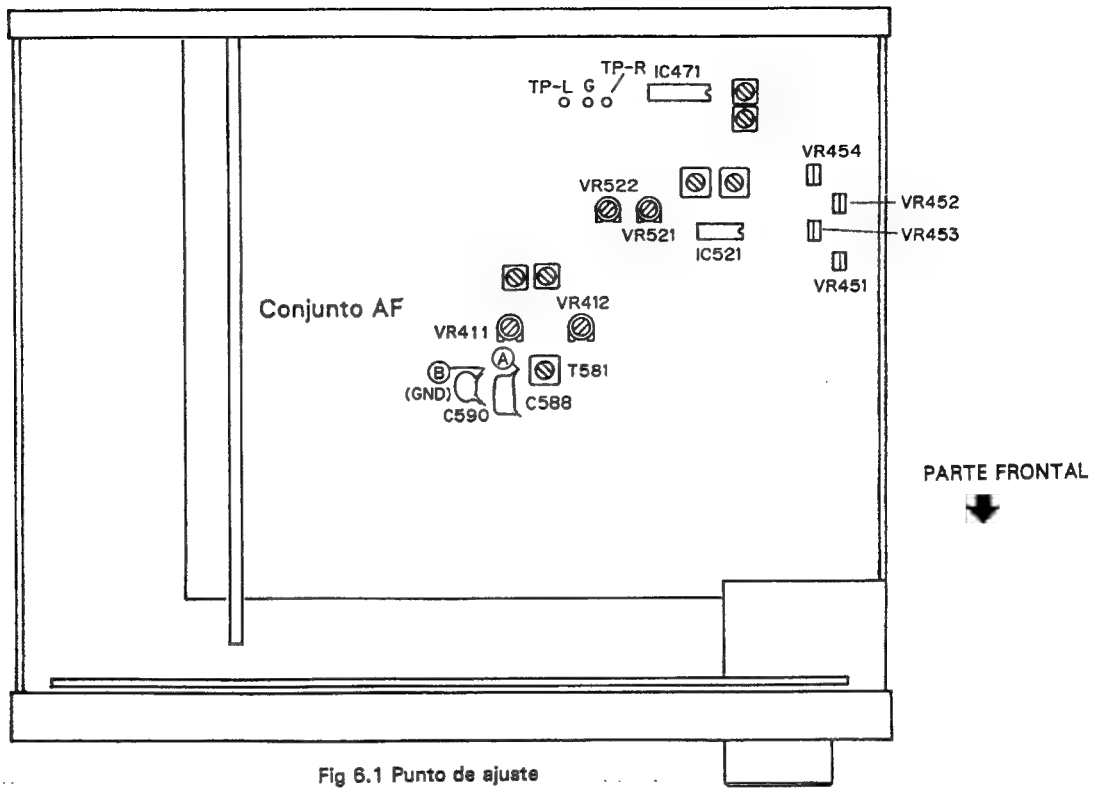


Fig 6.1 Punto de ajuste

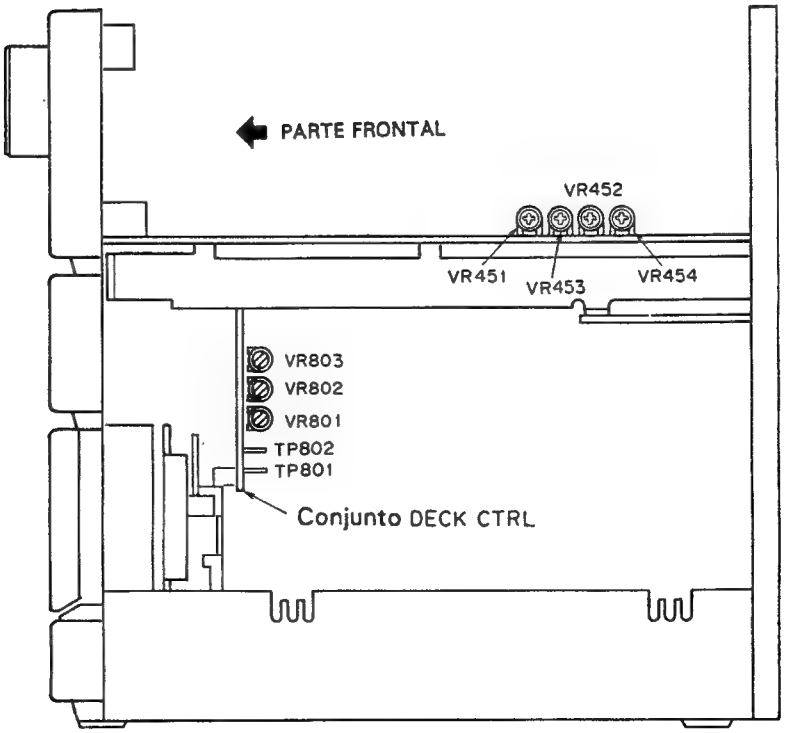


Fig 6.2 Punto de ajuste

- El ajuste y la medición se realizarán normalmente en el conjunto AF, a menos que se especifique otra cosa.
- Desactive (FLAT) el ecualizador gráfico. Dependiendo del pais de destino, el aparatopuede estar provisto de un control de volumen de mezcla microfónica (MIC).
  Se está provisto de un control de volumen de mezcla microfónica (MIC), ajústelo a la posición MIN.
- La función deberá estar ajustada siempre a "TAPE", a menos que se especifique otra cosa.

Ajuste del sistema mecánico

- Cinta de prueba: STD-301 (3 kHz, 30 min)
- Ajuste del modo de velocidad doble: Cortocircuite TP801 y TP802 del conjunto de control. Para desactivar el modo, abra el cortocircuito.

1. Ajuste de la velocidad de la cinta

Nº	Modo	Señal de enerada/ cinea de prueba	Punto de ajuste		Punto de medición	Valor de ajuste	Observaciones
1	PLAY	Reproducción de la cinta STDy301 a 3 kHz	Sección I	VR801 del conjunto DECK CTRL	TP-L (canal izquierdo)	Presione PLAY SW y ajuste la frecuencia a 3010 Hz ±10 Hz. Cerciórese de que la fluctuación y el efecto de trémolo estén dentro de los límites del 0,2%.	
2	PLAY (Modo de velocidad doble)			—		Presione PLAY SW en el modo de velocidad doble y compruebe si la frecuencia es 6000 Hz ±1000 Hz. Anote el valor.	Después del ajuste, desactive el modo de velocidad doble.
3	PLAY (Modo de velocidad doble)		Sección II	VR803 del conjunto DECK CTRL	TP-R (canal derecho)	Presione PLAY SW en el modo de velocidad doble y ajuste la frecuencia de forma que quede a ±30 Hz del valor anotado en el paso N°2.	Después del ajuste, desactive el modo de velocidad doble.
4	PLAY			VR802 del conjunto DECK CTRL		Presione PLAY SW y ajuste la frecuencia a 3010 Hz ±10 Hz. Cerciórese de que la fluctuación y el efecto de trémolo estén dentro de los límites del 0,2%.	

Ajuste del sistema eléctrico

■Antes de ajustar el sistema eléctrico, compruebe y realice lo siguiente.

1. El ajuste de la velocidad de la cinta ha finalizado.
2. Limpie y desmagnetice la cabeza empleando un desmagnetizador de cabezas.
3. Cuando se mida, el nivel devel debe ser de 0 dBV = 1V rms.
4. Emplee el lado A de la cinta especificada para realizar el ajuste.
   STD-331B: Para ajuste del sistema de reproducción.
   STD-630: Cinta en blanco NORMAL
   STD-620: Cinta en blanco de CrO2
   SRD-610: Cinta en blanco de METAL
5. Prepare los dispositivos de medición siguientes: Milivoltímetro de AC, oscilador de baja frecuencia, atenuador, y osciloscopio
6. Ajuste ambos canales, izquierdo y derecho, a menos que se especifique otra cosa.
7. Ponga los interruptores DOLBY NR en OFF, a menos que se especifique otra cosa.
8. Antes del ajuste, deje que la unidad se caliente durante varios minutos.
   Especialmente antes de ajustar las características de frecuencia de grabación y reproducción, deje que se caliente durante 3 a 5 minutos en el modo REC/PLAY.
9. Cerciórese de seguir el orden apropiado del procedimiento de ajuste. Cualquier cambio en el orden podría causar un resultado imperfecto.

Lista de adjuste

Sección I

1. Azimut de la cabeza
2. Nivel de reproducción

Sección II

1. Azimut de la cabeza
2. Nivel de reproducción
3. Características de frecuencia de grabación/reproducción
4. Nivel de grabación

Comprobación de la secciones I y II

1. Cerciórese de que ALC esté funcionando adecuadamente.

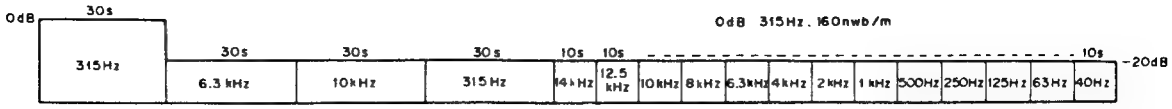


Fig. 6.3 Cinta de prueba STD-331B

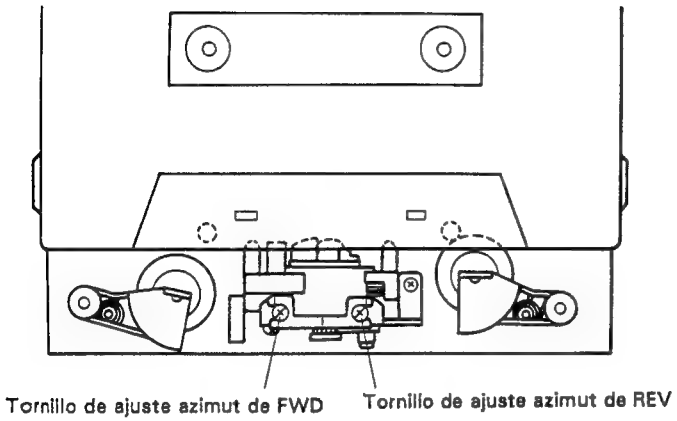


Fig. 6.4 Ajuste del azimut de la cabeza

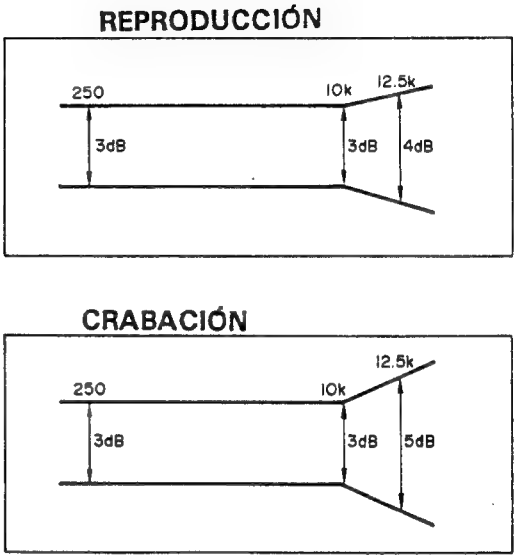


Fig. 6.5 Características de frecuencia

• Ajuste de la sección I

- La sección I dispone de un mecanismo selector automático de cinta.
- Nota: No cambie a FWD ni a REV mientras el destornillador esté insertado.

1. Ajuste azimutal de la cabeza

Procedimiento	Selector de cinta	Modo	Señal de entrada / cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Observaciones
1	NORM	PLAY	Ponga la cinta de prueba STD-331B en reproducción (10 kHz, -20 dB).	Tornillo de ajuste azimutal de la cabeza (Fig. 6-4)	TP-L (canal izquierdo) TP-R (canal derecho)	Nivel máximo de la señal de reproducción	Bloquee el tornillo con bloqueador de tornillos después de haber terminado el ajuste.

2. Ajuste del nivel de reproducción

- Tenga mucho cuidado durante el ajuste, ya que el valor ajustado será el nivel Dolby fijado para reproducción.

Procedimiento	Selector de cinta	Modo	Señal de entrada / cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Observaciones
1	NORM	PLAY	Ponga la cinta de prueba STD-331B en reproducción (315 Hz, 0 dB).	VR453 (canal izquierdo) VR454 (canal derecho)	TP-L (canal izquierdo) TP-R (canal derecho)	−6,7 dBV	

• Ajuste de la sección II

• La sección II dispone de un mecanismo selector automático de cinta.
• Nota: No cambie a FWD ni a REV mientras el destornillador esté insertado.

1. Ajuste azimutal de la cabeza

Procedimiento	Selector de cinta	Modo	Señal de entrada / cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Observaciones
1	NORM	PLAY	Ponga la cinta de prueba STD-331B en reproducción (10 kHz, -20 dB).	Tornillo de ajuste azimutal de la cabeza (Fig. 6-4)	TP-L (canal izquierdo) TP-R (canal derecho)	Nivel máximo de la señal de reproducción	Bloguee el tornillo con bloqueador de tornillos después de haber terminado el ajuste.

2. Ajuste del nivel de reproducción

• Tenga mucho cuidado durante el ajuste, ya que el valor ajustado será el nivel Dolby fijado para reproducción.

Procedimiento	Selector de cinta	Modo	Señal de entrada / cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Observaciones
1	NORM	PLAY	Ponga la cinta de prueba STD-331B en reproducción (315 Hz, 0 dB).	VR451 (canal izquierdo) VR452 (canal derecho)	TP-L (canal izquierdo) TP-R (canal derecho)	−6,7 dBV	

3. Ajuste de las características de frecuencia de grabación/reproducción

• Como este procedimiento es para el ajuste de la polarización de grabación, tenga cuidado de no aumentar el valor de distorsión mediante el subajuste de la polarización.

Procedimiento	Selector de cinta	Modo	Señal de entrada / cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Observaciones
1	NORM	REC	Cargue la cinta de prueba STD-630 y establezca el modo de grabación.	—	Área entre Ⓐ y Ⓑ (conjunto de A.F) mostrada en la Fig. 6-1.	Confirme que la frecuencia de oscilación sea de 105 kHz ±1 kHz.	Si el valor de ajuste no puede establecerse dentro de la especificación, ajuste T1401 del conjunto de REC.
2	NORM	REC	Aplique una señal de 315 Hz al terminal de entrada CD y ajuste la función a "CD".	Nivel de la señal de entrada	TP-L (canal izquierdo) TP-R (canal derecho)	−27,7 dBV	
3	NORM	REC / PLAY	Grabe y reproduzca la cinta de prueba STD-630 (315 Hz y 10 kHz).	VR411 (canal izquierdo) VR412 (canal derecho)	TP-L (canal izquierdo) TP-R (canal derecho)	Repita la corrección de forma que el nivel de reproducción de 10 kHz sea de 0 ±0,5 dB en relación con 315 Hz.	

4. Ajuste del nivel de grabación

Procedimiento	Selector de cinta	Modo	Señal de entrada / cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Observaciones
1	NORM	REC	Aplique una señal de 315 Hz al terminal de entrada CD y ajuste la función a "CD".	Nivel de la señal de entrada	TP-L (canal izquierdo) TP-R (canal derecho)	−7,7 dBV	
2	NORM	REC / PLAY	Grabe y reproduzca la cinta de prueba de forma que el nivel de reproducción de 315 Hz sea de −6,7 dBV.	VR521 (canal izquierdo) VR522 (canal derecho)	TP-L (canal izquierdo) TP-R (canal derecho)	Grabe y reproduzca la cinta de prueba de forma que el nivel de reproducción de 315 Hz sea de −6,7 dBV.	

• Procedimiento de comprobación para la secciones II

1. Acción del ALC

Procedimiento	Selector de cinta	Modo	Señal de entrada / cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Observaciones
1	NORM	REC	Aplique una señal de 315 Hz al terminal de entrada CD y ajuste la función a "CD".	Nivel de la señal de entrada	TP-L (canal izquierdo) TP-R (canal derecho)	−7,7 dBV	
2				+10 dB contra el nivel de entrada del paso 1.		−2,7 dBV ±2,5 dB	

7. IC INFORMATION

●Terminal Function of PDE029-C(DECK & AMP control microcomputer)

Note:I:CMOS input,N:Nch open drain output,
O:CMOS output,UN:Nch open drain output with pull-up MOS transister

No.	Terminal name	I/O	Function	Active
1	S1(DATA1)	N	Used for sending/receiving of DATA with microcomputer of TUNER.	H/L
2	S0(DATA2)	O		H/L
3	$\overline{SC}$	O		H/L
4	SREQ	O	Not used.	—
5	FADER (LED)	O	Not used.	—
6	1BIAS	O	Not used.	—
7	2BIAS	O	Oscillates BIAS only during REC mechanism 2.	H
8		I	Not used.	—
9	$\overline{COPY}$	UN	According to the various statuses in the table below, the control of the IC471 (for DOLBY NR) and for the switching inputs of the REC AMP are depicted as follows. DOLBY NR IC:IC471,HA12136 REC AMP Input Selector:IC521, TC4066BP	H/L
10	Dolby $\overline{P}$/R	UN		H/L
11	PB$\overline{1}$/2	UN	Control switching of playback mechanism (L:mechanism 1).	H/L
12	2.REC MUTE	UN	Sets to L only while mechanism 2 is in REC mode.	H
13	MS. PULSE	N	Not used.	—
14	1.REC MUTE	UN	Not used.	—
15	FADER	UN	Not used	—
16	PB. MUTE	UN	Turns OFF only during DECK playback mode.	H
17	1PULSE	N	Detects hall device pulse of mechanism 1.	H/L
18	2PULSE	N	Detects hall device pulse of mechanism 2.	H/L
19	HI/$\overline{NORM}$	N	Controls TAPE SPEED (H:double speed).	H/L
20	POW. RY	O	Becomes "H" when POWER is turned ON.	H
21	$\overline{1. MOTOR}$	N	Controls the motor of mechanism 1. (L:MOTOR rotates).	L
22	$\overline{P.ASES}$	N	Not used.	—

FUNCTION	REC MODE	COPY (Pin 9)	DOLBY P/R (Pin 10)
TAPE	REC not operated	L	L
	REC is operating.	H	L
Except TAPE	REC not operated.	L	L
	REC is operating	L	H
	COPY is operating (both normal speed and double speed).	L	L

No.	Terminal name	I/O	Function	Active
23	$\overline{1.\bullet}$	N	Not used.	—
24	$\overline{2.MOTOR}$	N	Controls the motor of mechanism 2. (L : MOTOR rotates).	L
25	$\overline{DIGI\ ON/OFF}$	O	Not used.	—
26	$\overline{SP.RY}$	O	Controls SP RELAY(RY351) Operates MUTE for 5seconds after POWER is turned ON. Turns SP RELAY OFF immediately after POWER is turned OFF.	L
27	V-UP	O	Controls TA7291S and UP/DOWN of the MOTOR VOLUME.	H
28	V-DOWN	O		H
29	L-MUTE	O	Operates MUTE for 0.5seconds when FUNCTION is switched and DIRECT is ON/OFF. When POWER is ON, the SP RELAY is turned ON, and it takes 0.3seconds until the output signal of VOLUME(VR391) functions for muting.	H
30	TEST	—	Not used (GND).	—
31	Vss	—	GND.	—
32	OSC1	—	Connects 4.19MHz ceramic resonator.	—
33	OSC2	—		—
34	RES	—	RESET terminal.	L
35	A	O	Transfer DATA of 3bit to the 74LS42P and uses as KEYSCAN OUT K00–K06.	L/H
36	B	O		L/H
37	C	O		L/H
38	$\overline{1.\blacktriangleright\ (LED)}$	N	Controls the FWD PLAY LED of mechanism 1.	L
39	$\overline{1.\blacktriangleleft\ (LED)}$	N	Controls the REV PLAY LED of mechanism 1.	L
40	$\overline{2.\blacktriangleright\ (LED)}$	N	Controls the FWD PLAY LED of mechanism 2.	L
41	$\overline{2.\blacktriangleleft\ (LED)}$	N	Controls the REV PLAY LED of mechanism 2.	L
42	$\overline{2.\bullet\ (LED)}$	N	Control the REC LED of mechanism 2.	L
43	$\overline{ASES(LED)}$	N	Controls the ASES LED.	L
44	$\overline{R.REC(LED)}$	N	Not used.	—
45	$\overline{R.ASES\ (LED)}$	N	Not used.	—
46	SOL2B	O	Controls the solenoid for FF/REW of mechanism 2.	H
47	SOL2A	O	Controls the solenoid for PLAY of mechanism 2.	H
48	SOL1B	O	Controls the solenoid for FF/REW of mechanism 1.	H
49	SOL1A	O	Controls the solenoid for PLAY of mechanism 1.	H

Controls TA7291S and UP/DOWN of the MOTOR VOLUME.

	V-UP (Pin 27)	V-DOWN (Pin 28)
UP	H	L
DOWN	L	H

No.	Terminal name	I/O	Function	Active
50 ~ 55	K10 ~ K15	I	KEY matrix input.	H/L
56	K16	N		
57	K17			
58	SURROUND	UN	Controls SURROUND ON/OFF (for SD type only).	H
59	DIRECT	UN	Controls DIRECT ON/OFF.	—
60	F-MUTE	UN	Operates MUTE for 0.5seconds when FUNCTION is switched. When POWER is ON after SP RELAY(RY351) is activated (ON), MUTE is operated for 0.3seconds.	H
61	INH	UN	Switches FUNCTION.	H/L
62	B	UN		H/L
63	A	UN		H/L
64	VDD	–	+5V	–

8. FOR HE TYPE

8.1 CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

The DC-Z72/HE type is the same as the DC-Z72/HB type with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		DC-Z72/HB type	DC-Z72/HE type	
	POWER SUPPLY assembly	AWZ2241	AWZ2239	
	CONNECT assembly	Non supply	Non supply	
⚠	FU2001,FU2004,FU2005 Fuse(T1 . 25A/250V)	AEK-509	• • • • •	
⚠	FU2001,FU2004,FU2005 Fuse(T1 . 25A/250V)	• • • • •	AEK-018	
⚠	FU2003 Fuse(T800mA/250V)	AEK-507	AEK-031	
⚠	AC Power cord	ADG-063	ADG-1021	
	Operating instruction(English)	ARB1154	• • • • •	
	Operating instruction(English,German,French, Italian,Dutch,Swedish,Spanish,Portguese)	• • • • •	ARE1111	
	Operating instruction(German)	• • • • •	ARC1129	

8.2 POWER SUPPLY assembly(AWZ2239;HE TYPE)

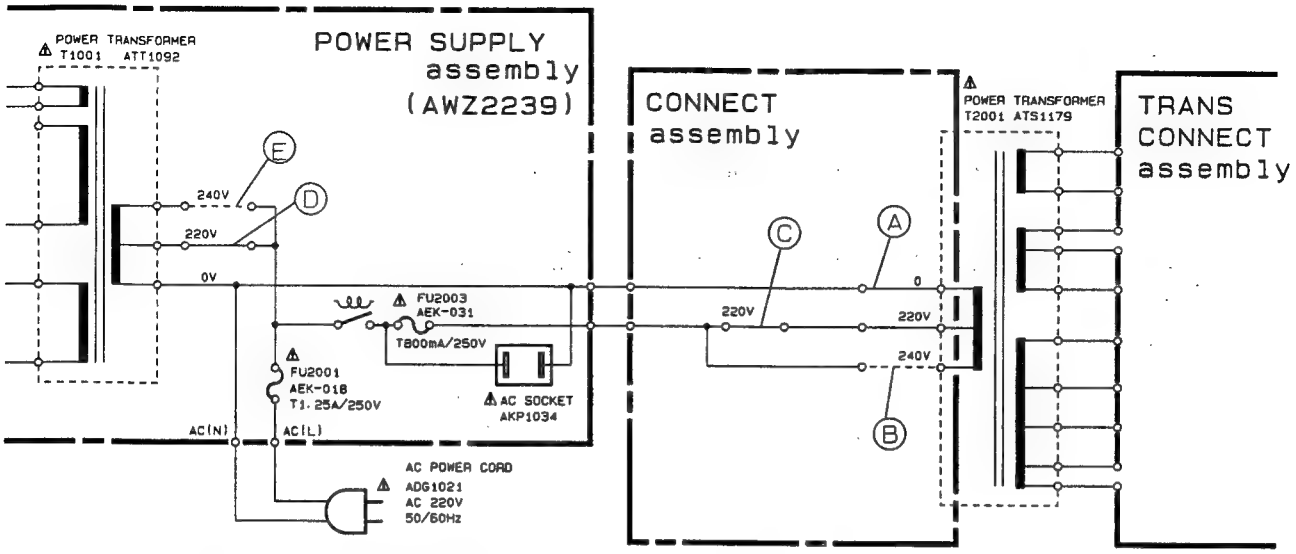
The POWER SUPPLY assembly(AWZ2239;HE TYPE) is the same as the POWER SUPPLY assembly(AWZ2241;HB TYPE) With the exception of the following sections.

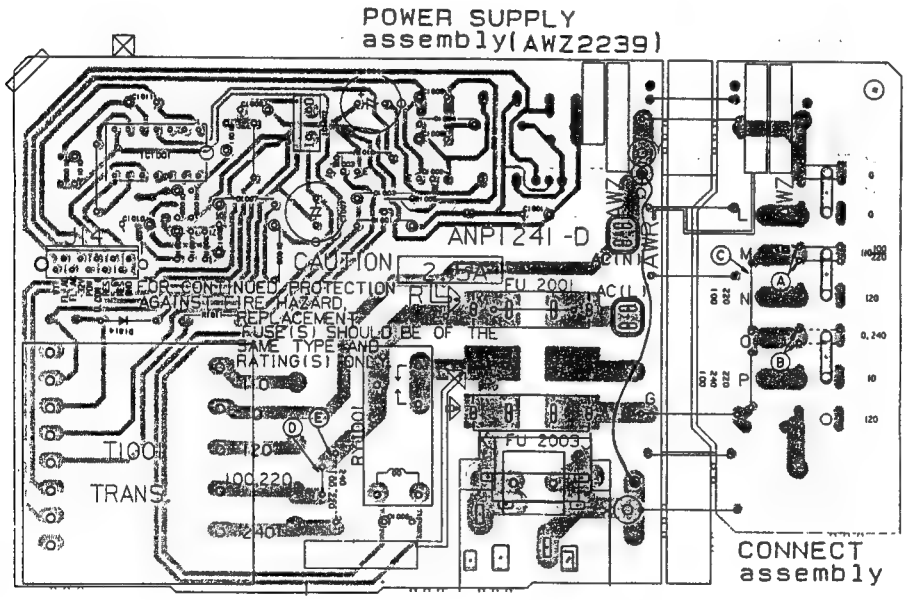
Mark	Symbol & Description	Part No.		Remarks
		AWZ2241;HB type	AWZ2239;HE type	
⚠	AC socket(OUTLET)	AKP1035	AKP1034	

8.3 CONNECT assembly(HE TYPE)

The difference in parts between the CONNECT assemblies HB type and HE type is only the jumper wire.

8.4 SCHEMATIC AND P.C.BOARDS DIAGRAM





Line Voltage Selection (FOR HB AND HE TYPES)

Line voltage can be changed with the following steps.

1. Disconnect the AC power cord.
2. Remove the top cover.
3. Change the position of the jumper wires Ⓐ-Ⓔ as follows.

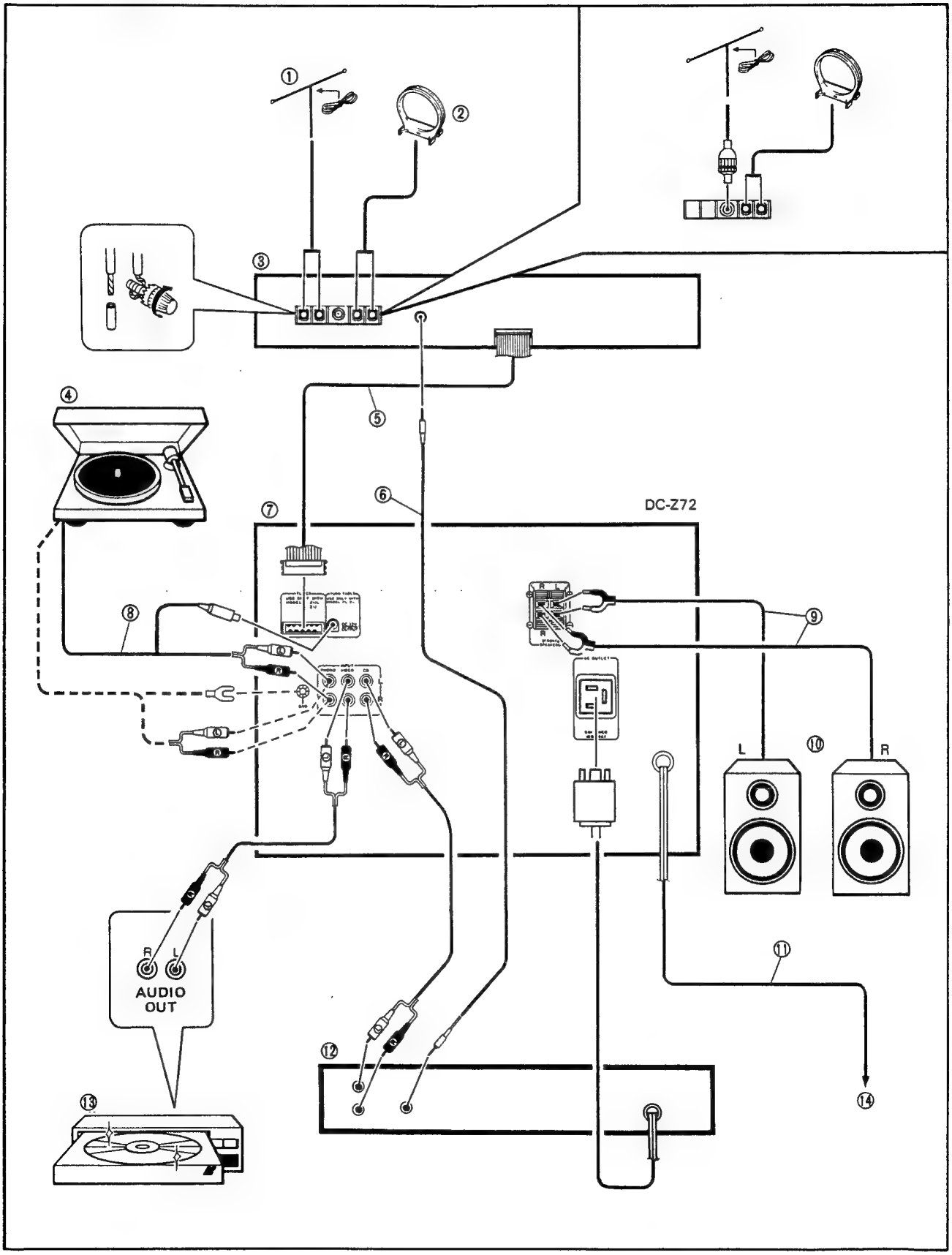
Voltage / Jumper wire	220V	240V
Ⓐ	○	×
Ⓑ	×	○
Ⓒ	○	×
Ⓓ	○	×
Ⓔ	×	○

○:Be needed
×:Be needless

4. Stick the line voltage label on the rear panel.

Part No.	Description
AAX-193	220V label
AAX-192	240V label

9. CONNECTIONS



Refer to page 73 for the connections diagram.

① Accessory FM antenna
② Accessory AM loop antenna
③ FM/AM tuner (F-Z92 or F-Z92L)
④ Turntable (Separately sold PL-Z82 or PL-Z92)
⑤ Tuner input/output cord
⑥ CD player control cord
⑦ Cassette tape deck amplifier
⑧ Turntable output cord
⑨ Speakers cord
⑩ Speaker system
⑪ Power cord
⑫ CD player (Separately sold PD-Z72T or PD-Z82M)
⑬ LD player or video cassette recorder (VCR)
⑭ AC wall socket

Plug the power cord into the AC wall socket outlet only after all the connections have been completed.

If the FM antenna of the FM/AM tuner terminal is a PAL connector only, then refer to connection diagram B.

Proceed as follows with the set-up and connections:

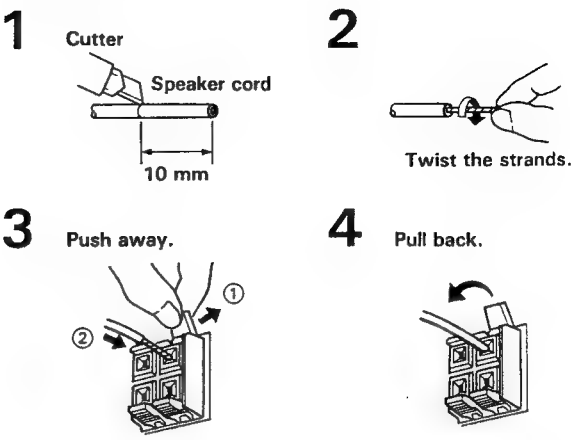
1. **Place the cassette tape deck amplifir on top of the CD player.**
2. **Connect the CD player OUTPUT jacks to the cassette tape deck amplifier CD INPUT jacks with audio cords.**
3. **Place the tuner on top of the cassette tape deck amplifier.**
4. **Connect the tuner input/output cord ⑤ to cassette tape deck amplifier.**
   TUNER CONNECTION
   Insert the connector until it locks, thus ensuring that it is connected. When disconnecting the connector, pull it in the opposite direction while pressing the left and right claws.
   If using this unit together with the optional PD-Z72T or PD-Z82M, connect the control cord ⑥.
5. **Connect the FM antenna ① and the AM loop antenna ② to the tuner antenna terminals.**
6. **Place the turntable on top of the tuner.**
7. **Connect the turntable cords ⑧ to the cassette tape deck amplifier jacks.**
   If using this unit together with the optional PL-Z82 or PL-Z92, connect the turntable's audio cords and power supply cord respectively to the cassette tape deck amplifier's PHONO jacks and DC 12V OUTPUT jack.
   If using a different turntable, connect the audio cord and earth cord.
8. **Use the "VIDEO" jacks for connection to the audio jacks of an LD player or VCR.**

NOTE:

- *Insert the plugs securely into the jacks. Improper connection can lead to sound distortion or malfunctioning.*
- *The white plug is for the left channel connection and the red plug for the right channel connection.*

9. **Connect the speaker cords ⑨ to the SPEAKERS terminals.**
   Connect the "+" terminals on the cassette tape deck amplifier to the "+" terminals on the speakers, the "−" terminals on the cassette tape deck amplifier to the "−" terminals on the speakers.

Connecting the speaker cords.



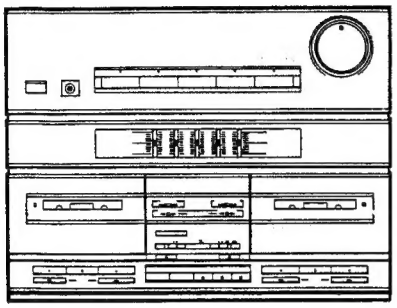
NOTE:
Do not allow the conductors of the cords to project beyond the terminals and to come into contact with other conductors. A breakdown or failure may occur when conductors touch one another.

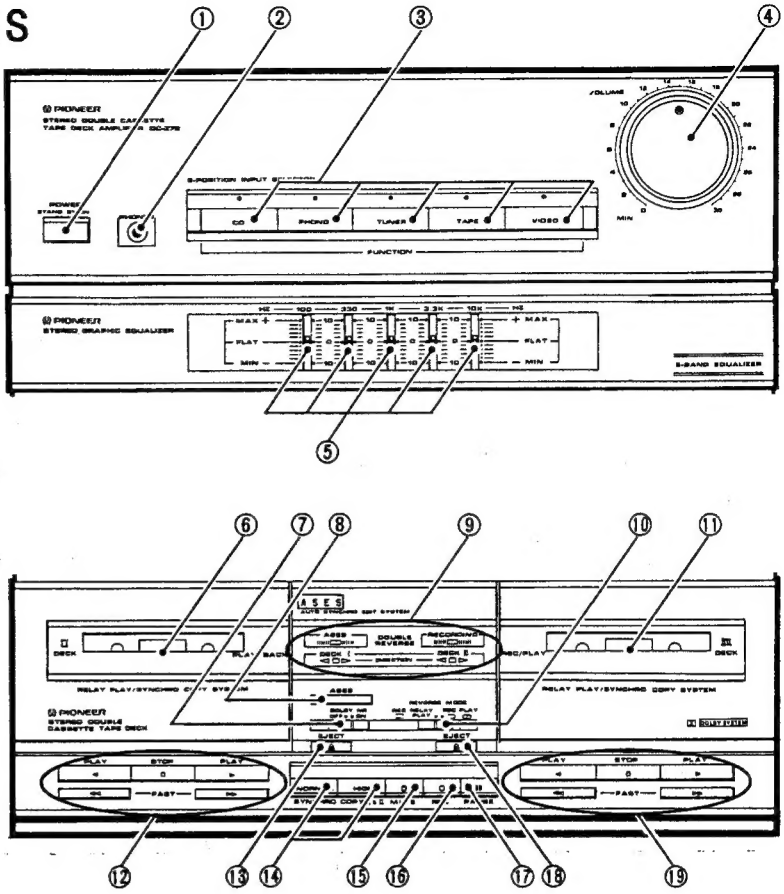
Speaker impedance
Connect speaker systems with a nominal impedance ranging from 6 to 16 Ω.

10. **Finally, connect the power cord ⑪ to the AC wall socket ⑭.**

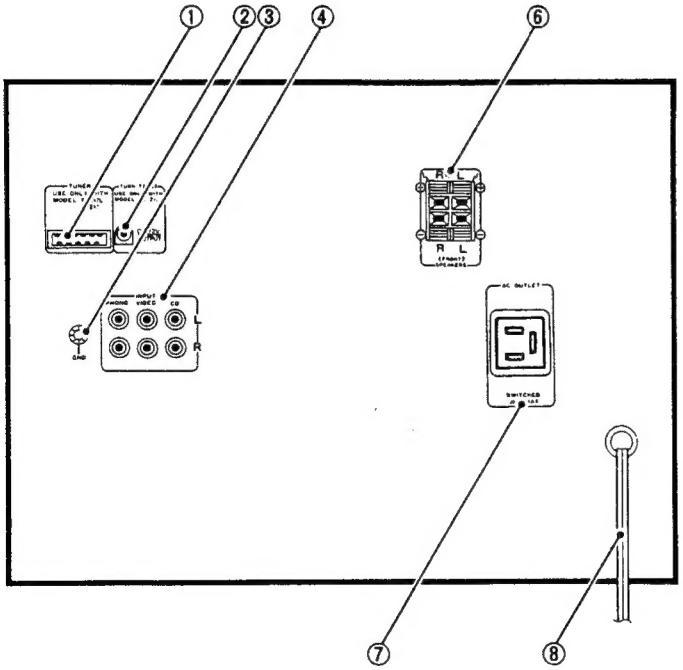
10. PANEL FACILITIES

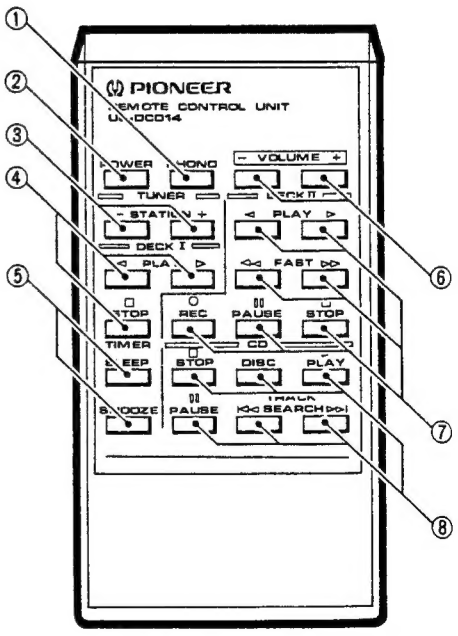
DC-Z72





DC-Z72





REAR PANEL FACILITIES

Cassette tape deck amplifier: DC-Z72

① TUNER jacks
Connect the F-Z92 (or F-Z92L) FM/AM tuner.

② TURNTABLE OUTPUT jack
This jack supplies power to the PL-Z82 or PL-Z92.

③ Ground terminal (GND)
Connect this to the ground terminal on the turntable (except for PL-Z92 and PL-Z82).

④ INPUT jacks
PHONO: Connect the audio output cord on the turntable to these jacks.
VIDEO: Connect to audio output jacks of LD player or VCR, etc.
CD: Connect to audio output jacks of CD player.

⑥ SPEAKERS terminals
L: Connect the left speaker system as seen from the listening position.
R: Connect the right speaker system as seen from the listening position.

NOTE:
Connect a speaker system having a nominal impedance ranging from 6 Ω to 16 Ω.

⑦ AC OUTLET (SWITCHED 100 W MAX)
Power supplied through these outlets is turned on and off by the cassette tape deck amplifier's POWER switch. Total electrical power consumption of connected equipment should not exceed 100 W.

NOTE:
Do not connect appliances with high power consumption such as heaters, irons, or television sets to the AC OUTLET in order to avoid overheating or fire risk.
This can cause the cassette tape deck amplifier to malfunction.

⑧ Power cord
Connect this to the AC wall socket.

FRONT PANEL FACILITIES

Cassette tape deck amplifier: DC-Z72

- Tapes can be played back on deck I; tapes can be played back and recorded on deck II.
- Sound can be recorded as adjusted by the graphic equalizer.

Amplifier/Graphic equalizer section

① POWER STANDBY/ON switch
When this switch is set to the on position, power is supplied to the cassette tape deck amplifier's main circuit. The POWER unit's switch is geared to selecting the transformer's secondary so that even in STANDBY position, the unit's circuitry will work as long as the power cord is connected to a power outlet. Disconnect the power cord from the power outlet when you do not plan to use the unit for a long period of time.
The unit is in STANDBY when the tuner section display indicates only the time.

② Headphone jack (PHONES)
For stereo headphone plug.

③ FUNCTION switches/indicators
[CD]
Press to listen to a CD player connected to the CD jacks.
[PHONO]
Press to play records on a turntable connected to the PHONO jacks.
[TUNER]
Press to listen to a radio broadcast.
[TAPE]
Press to listen to a cassette tape.
[VIDEO]
Press to listen to a stereo component connected to the VIDEO jacks.

④ VOLUME control

⑤ Graphic equalizer controls
Fine adjustments in sound quality are possible using the 5 controls on the graphic equalizer. These let you simultaneously adjust the tonal quality the left and right channels.

Cassette Tape Deck Section

⑥ Deck I cassette door

⑦ DOLBY* NR switch
Set this switch to the ON position to activate the DOLBY NR system.
- Tapes recorded using Dolby noise reduction should always be played back with the noise reduction system on. Sound quality will be adversely affected if they are played back with the system off, or if tapes recorded using a different noise reduction system are played back with the Dolby NR system on.
- It is recommended that tapes recorded using Dolby B NR be so marked on the label. This will help to prevent incorrect setting of the noise reduction switch during playback.

*

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ⧈ are trademarks of Dolby Laboratories Licensing Corporation.

⑧ ASES switch
Use to automatically record a CD on cassette tape.

⑨ Operation indicators
ASES: Lights when the ASES (Auto Synchro Editing System) is operating.
RECORDING: Lights when recording. Flashes when copying a tape.
Slow flashing = Normal copy
Rapid flashing = High speed copy
Direction (◄ ►): Show direction of tape travel.

⑩ REVERSE MODE switch

Switch position	During playback	During recording
REC RELAY / PLAY	Plays both tape sides. When one deck finishes playback, the other side begins playback of both tape sides (6 times maximum). If there is a tape in only one deck, then that deck continuously plays both sides of the tape (6 times maximum).	Records on one side (Deck II only).
REC PLAY	Plays both sides continuously (6 times maximum).	Records on both sides (Deck II only).

⑪ Deck II cassette door

⑫ Deck I Operation switches

► **PLAY (FWD)**..... For playing back a tape in the forward mode.
◄ **PLAY (REV)**..... For playing back a tape in the reverse mode.
■ **STOP**..... For stopping the tape.
►► **FAST** ..... Fast forward in forward mode, rewind in reverse mode.
◄◄ **FAST** ..... Rewind in forward mode, fast forward in reverse mode.

⑬ Deck I EJECT switch

⑭ SYNCHRO COPY switches

Use for tape copying.
NORMAL: Copying from the Deck I tape to the Deck II tape at normal recording/playback speed.
HIGH: Copying at about twice normal tape speed. (Copies can be made in about half the NORMAL time.)

⑮ MUTE (○) switch (Deck II)

Use to create an unrecorded blank space between songs. The unrecorded space will be created for as long as this switch is kept depressed during recording.

⑯ REC (●) switch (Deck II)

Set to recording standby mode. Recording will then begin when you press the PLAY switch (◄ or ►).

⑰ PAUSE (II) switch (Deck II)

Temporarily stops tape travel. Cancels pause mode when pressed again.

⑱ Deck II EJECT switch

⑲ Deck II Operation switches

►**PLAY (FWD)**..... For playing back a tape in the forward mode.
◄**PLAY (REV)**..... For playing back a tape in the reverse mode.
■ **STOP**..... For stopping the tape.
►► **FAST** ..... Fast forward in forward mode, rewind in reverse mode.
◄◄ **FAST** .....Rewind in forward mode, fast forward in reverse mode.

Remote control unit

① PHONO key

Sets function to PHONO.

② POWER key

③ TUNER STATION keys

- Before operation, memorize broadcast stations in the STATION CALL switches.

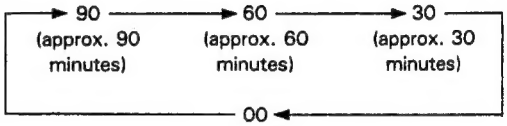
+..... Stations change in order in the upward direction.
–..... Stations change in order in the downward direction.

④ Deck I operation keys

► ..... Forward play
◄ ..... Reverse play
■..... Stop

⑤ Timer operation keys

SLEEP: Sets the sleep timer. Each time you press this key, the setting changes as shown here. The current setting is shown on the tuner display.
Power turns off when your set time has elapsed.



If you press the SLEEP key during SLEEP operation, the display will show the time remaining till power turns off.

SNOOZE: Turns off power if pressed after timer playback begins. Timer playback begins again approx. 5 minutes later.

⑥ VOLUME UP (+)/DOWN (–) keys

⑦ Deck II operation keys

► ..... Forward play
◄ ..... Reverse play
►► ..... Fast forward
◄◄ ..... Fast reverse
■..... Stop
II..... Pause
●..... REC (recording standby). Next, press the play key to begin recording.

⑧ CD operation keys

Make the connections so that the CD player can be operated by the remote control unit.
► ..... Play
DISC ..... DISC selection
■..... Stop
II..... Pause
|◄◄, ►►| ..... Track search

NOTE:
Note that the DISC selector key on the accessory remote control unit may not function, depending on the CD player used.

The amplifier section function automatically switches to the music source being operated when you press the CD playback (►), cassette tape deck playback (◄, ►), or tuner station controls.
To operate with the remote control unit, use the keys with the same function indicating symbols (for example ►) as those shown on the components.

NOTE:
It is not possible to operate the CD player with the remote control unless the remote control cord is connected

Range of remote control
When the remote control unit is pointed at the remote sensor window on the tuner and any of its keys is pressed, the tuner and other components can be operated by remote control.
Distance: Within a range of approx. 7 meters from the remote sensor window on the tuner.
Angle: Within approx. 30 degrees from the center of the remote sensor window on the tuner.
Remote control will not be possible if there is an obstacle between the remote control unit itself and the remote sensor window on the tuner.